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NATIONAL COLLEGE OFART AND DESIGN

FACULTY OF EDUCATION

B.A DEGREE IN ART AND DESIGN EDUCATION

DISSERTATION ABSTRACT

NAME - TRIONA SWEENEY
TITLE - UNDERSTANDING THE SIOW LEARNER.

This disseration is an exploration of the psychological and behavioural development of the slow learner, and an exploration of the particular problems that the slow learner faces. The learning process is analysed in order to understand the requiements of the slow learner.
This secoundary research was used in designing the"Woodlands Tale" scheme.
This scheme was taught using a combination of techniques acquired from the secoundary research in order to maximise learning potential and minimise the effects of the problems faced by the slow learner.

National College of Art and Design

Faculty of Education

Understanding the Slow Learner

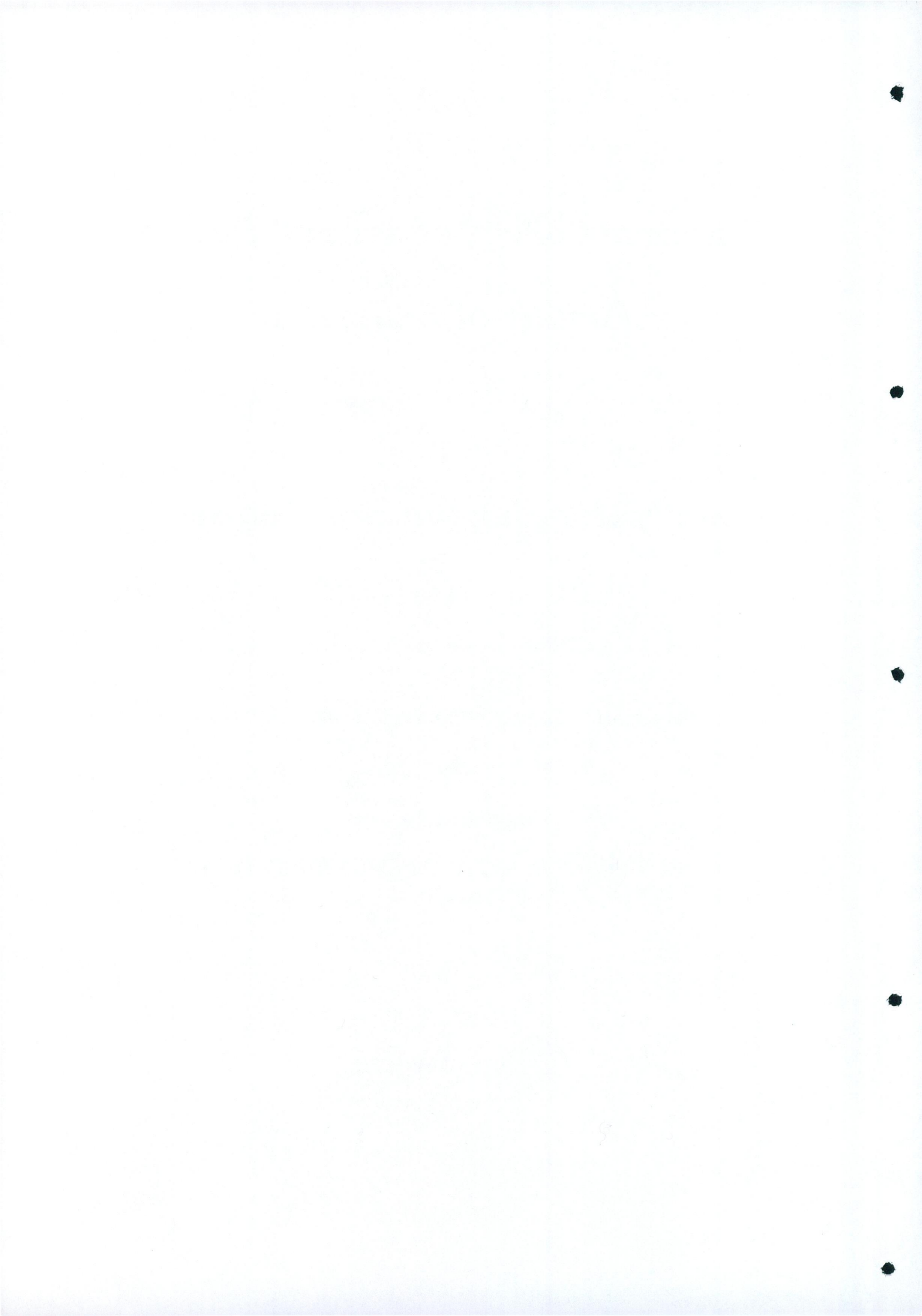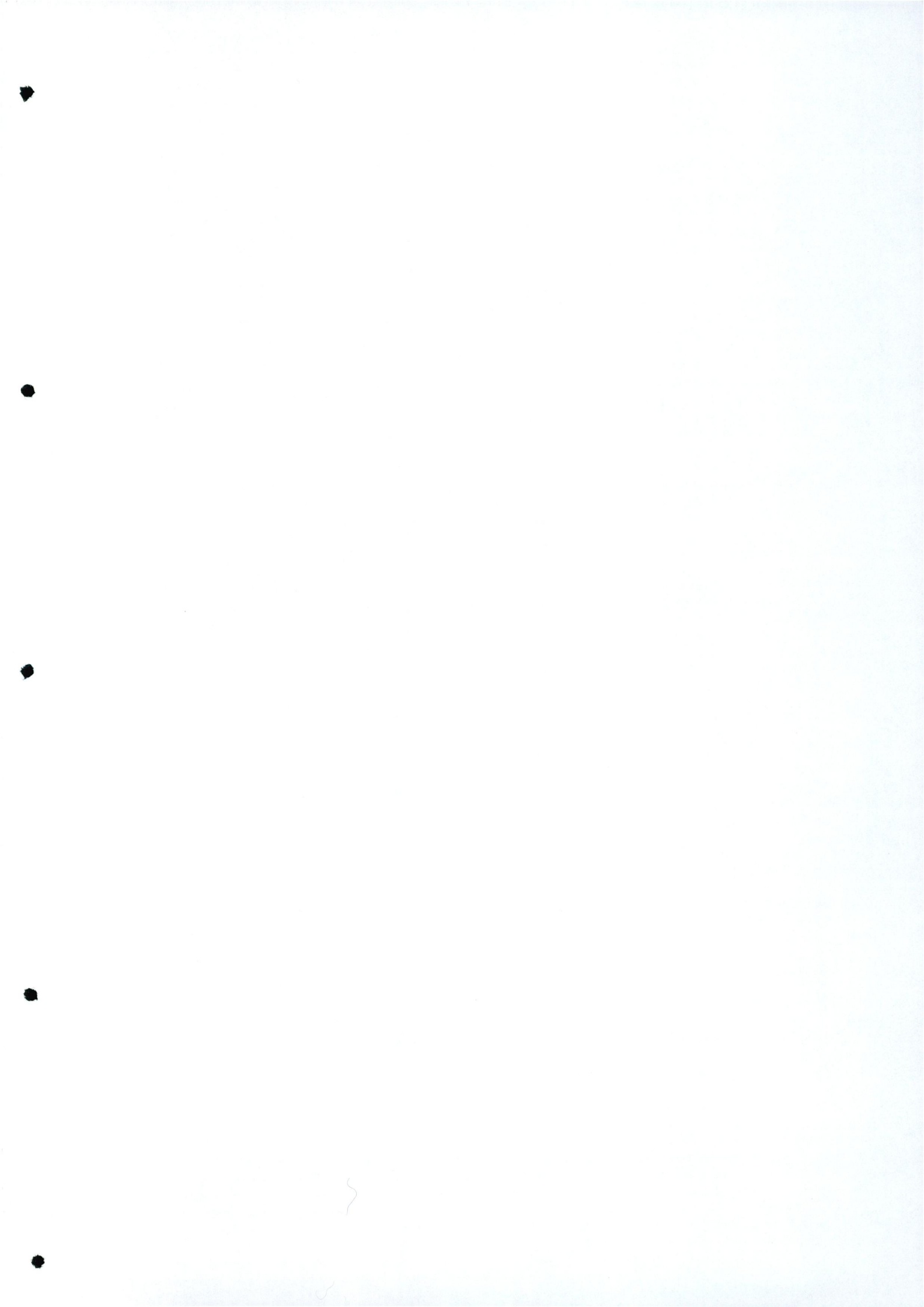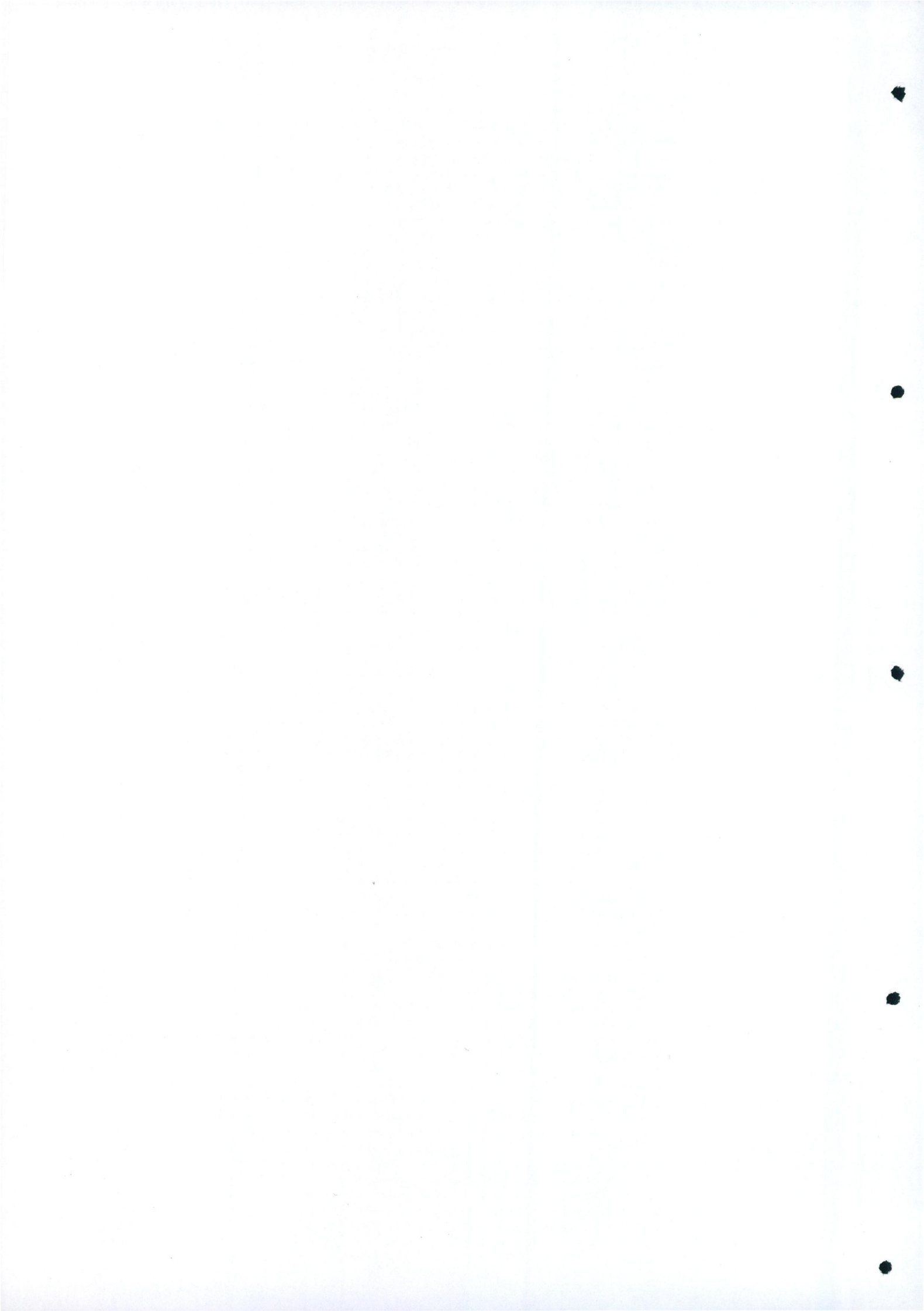A Dissertation Submitted to the Faculty of Education

in

Candidacy for the

B.A. DEGREE IN ART AND DESIGN EDUCATION

By

Trióna Sweeney

Introduction

As the title conveys, this dissertation is all about understanding the slow learner. I chose this topic, as one of the classes I taught in this, my final year, comprised of students that were slow learners. The class in question, '2C' were termed as having learning disabilities by their school. They underwent 5 recognised tests to ascertain their abilities.

The first three tests were NFER tests. These tests are considered very good predictors of future performance, and they tested the students under the following categories:

(1) Verbal reasoning

(2) Numerical reasoning

(3) Perceptual reasoning

They also underwent the Standard Progressive Matrices test. This was designed to test intellectual capacity.

They were given a Shonell silent reading test B in order to establish their chronological reading age.

Finally they did the Junior Vernon Graded Arithmetic test which tested their mathematical ability at primary level. These tests were graded A,B,C,D,E. The students were graded DD, which is well below average.

Consequently, the students do fewer subjects than their peers, 8 as opposed to 9. They get extra, individual tuition in maths (in which they are very weak), and English once or twice a week. They also take typing classes, at which some of the weaker students are found to be very good.

In the past, the school found that this system worked very well for slow learners. However, this approach is not working with '2C', because the stronger personalities in the class are dictating the overall class attitude, and these students have a detrimental effect on class performance.

With these facts in mind, I began to closely observe the behaviour of the class, with the result that I became curious about these students' learning abilities and capacity. This led me to explore the learning process of the human mind, and to examine the work of psychologists who sought to explain these process. I also sought answers to problems that I encountered in the classroom with '2C'. Throughout this research, several names cropped up again and again, and it is the work of these people on which I concentrate. This dissertation is the result of my studies.
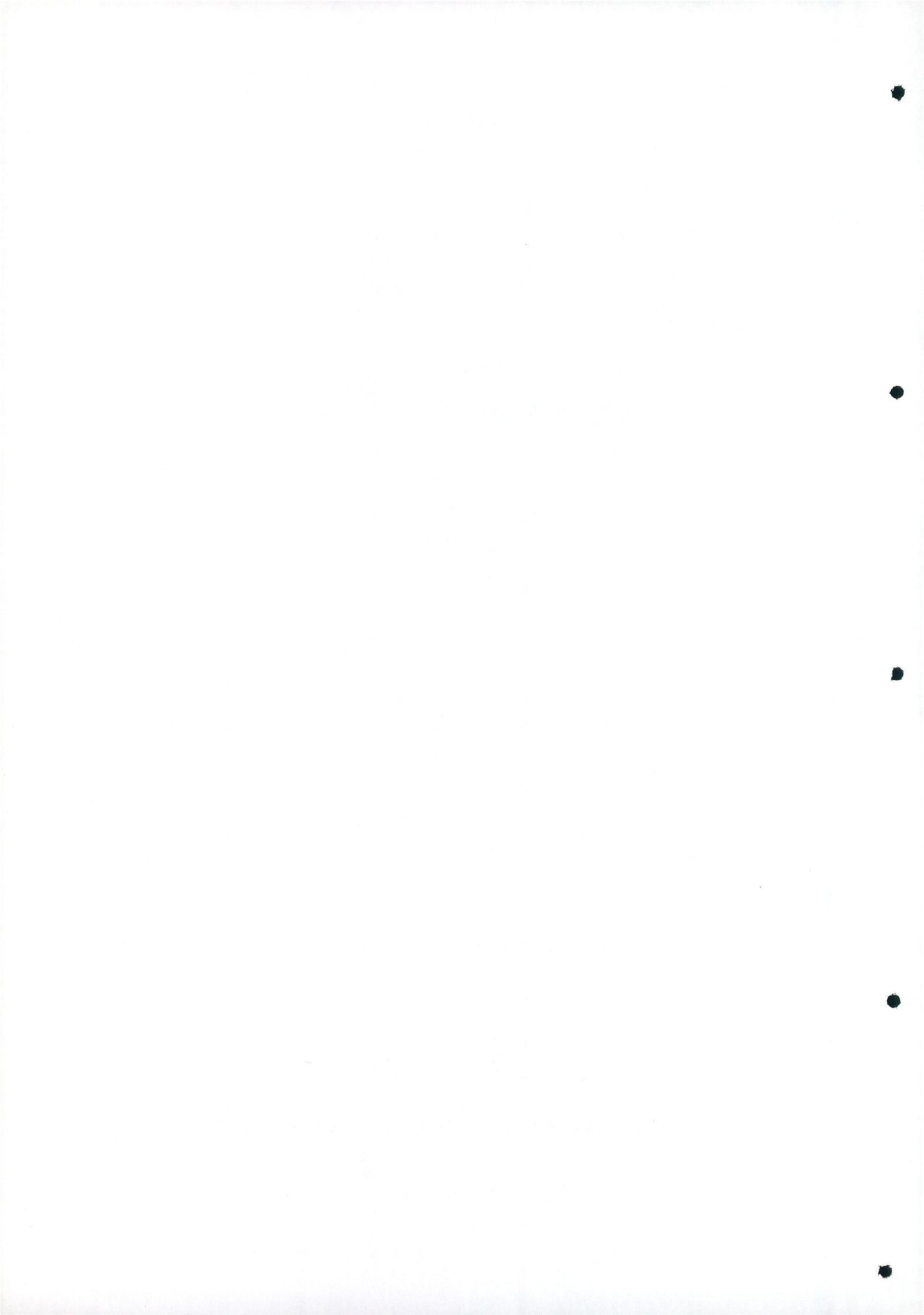
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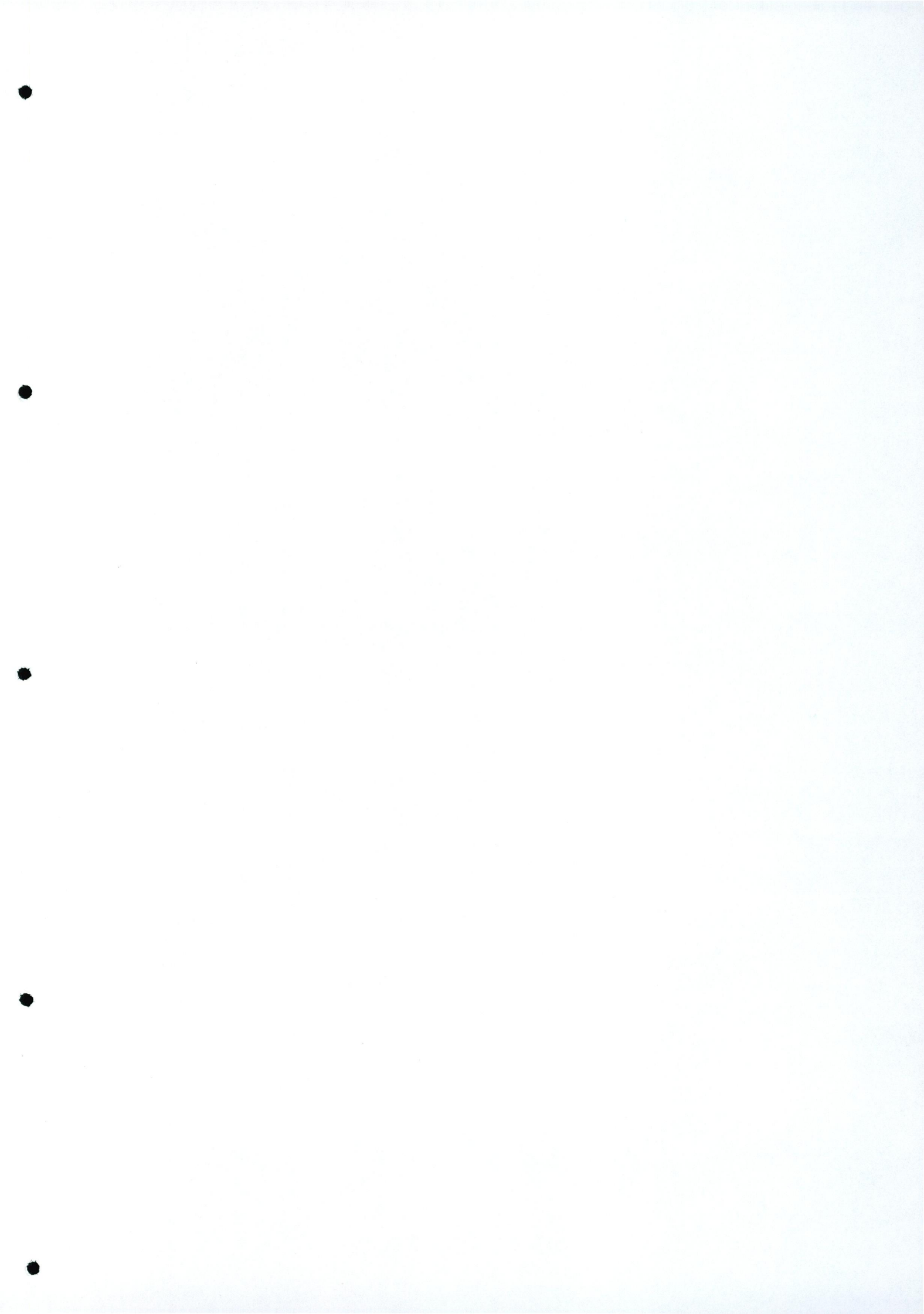Triona Sweeney,

1997.

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I. Slow Learners

Where children are not coping with the work normally expected of their age group, they are said to be slow learners.[1]

A learning disability refers to a retardation or delayed development in one or more of the processes of speech, language, reading, writing, arithmetic, or other school subjects, resulting from a psychological handicap caused by a possible cerebral dysfunction and or emotional or behavioural disturbances. It is not the result of mental retardation, sensory deprivation, or cultural and instructional factors.[2]

Children who have learning disorders are those who manifest educationally significant discrepancies between their estimated intellectual potential and actual level of performance related to basic disorders in the learning process which may or may not be accompanied by demonstrable central nervous system dysfunction, and which are not secondary to generalised mental retardation, severe emotional disturbance, or sensory loss.[3]

Considerable debate has surrounded the issue of defining learning disabilities, and as a consequence, no one absolute definition exists that covers the issue completely. At least eleven definitions have enjoyed some degree of official status in the field. Above are three of the more recognised ones.

The first one from Denis Child, is the broadest and most general and as such does not provide sufficient detail to be of much use to a teacher. Kirk's definition on the other hand attributes learning disability to a psychological handicap and he suggests causes, i.e. cerebral dysfunction, emotional or behavioural disturbances. There are five main components of Kirk's definition:-
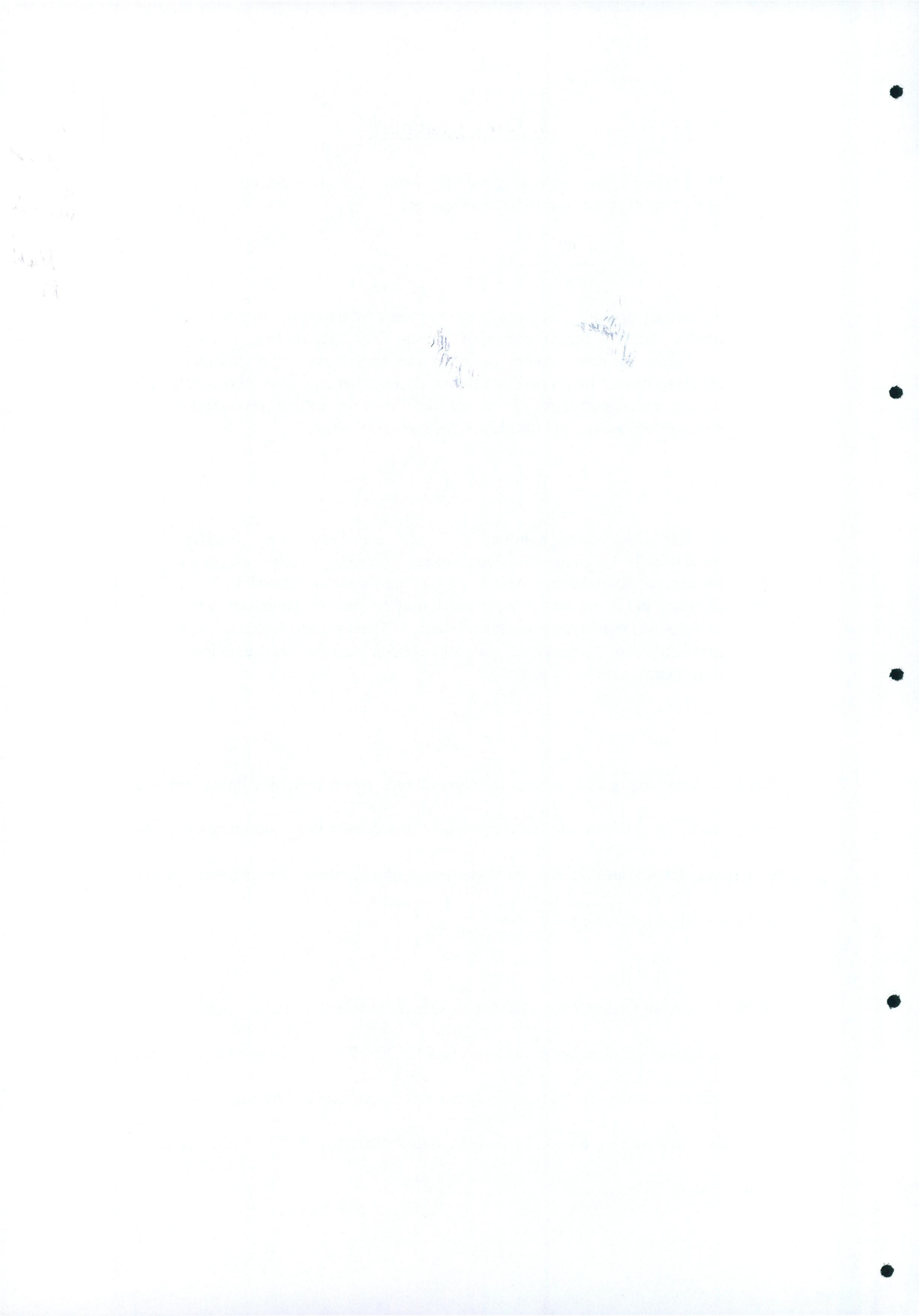
(1) <u>Sub-average achievement-</u> (reading, writing and arithmetic) or achievement related (speech or language) behaviour.

(2) <u>Intra-individual differences-</u> The possibility that the sub-average achievement or achievement related behaviour occur(s) in only some areas or one area, with average or above average achievement occurring in other areas.

(3) <u>References to psychological handicaps-</u> (often referred to as psychological processes by Kirk and others) as causal factors.

(4) <u>References to cerebral dysfunction</u> as a possible causal factor.

(5) <u>Exclusion of other disabling conditions</u> (eg, mental retardation) and environmental conditions as causal factors.

Having studied with Kirk, Bateman's opinions were influenced to a degree by her teacher, however, her definition differed from Kirk's in at least two important respects. Firstly, it did not refer to emotional disturbance as one of the factors that does <u>not</u> cause learning disabilities. Secondly, it included a reference to a discrepancy between intellectual potential and actual performance.

These definitions are just examples of the diversity of opinion in this field. It is important to learn more about the processes and development of the human mind before any real progress can be made in understanding this topic. In this dissertation, I have explored the work of many psychologists and behaviourists in order to understand how the mind of the student with a learning disability works. The best way to start is with learning itself.
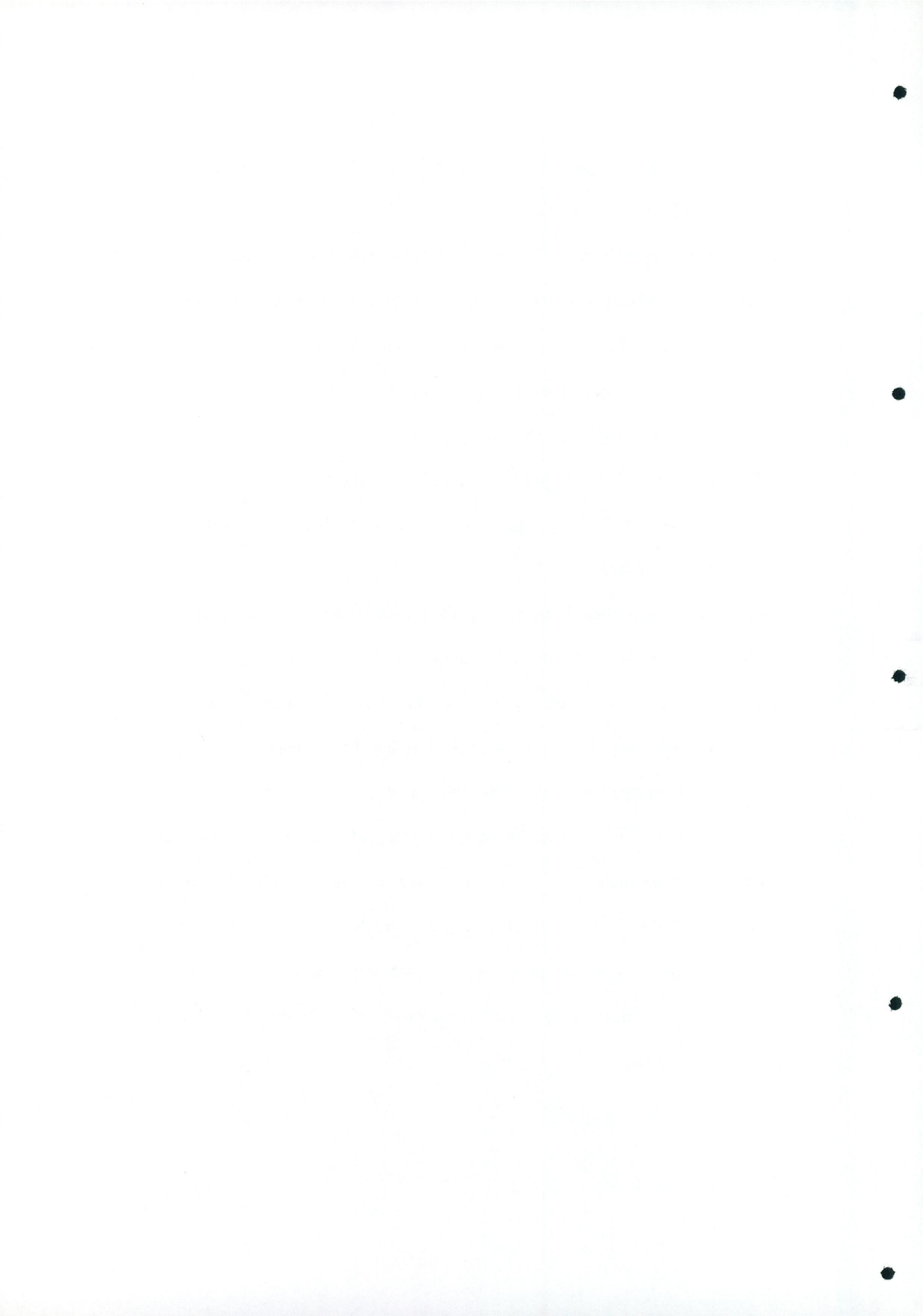
II. What is learning?

While there has been no complete agreement among psychologists as to the specific details of the learning process, they do accept the basic premise that "learning occurs whenever one adopts new, or modifies existing behaviour patterns in a way which has some influence on future performance or attitudes."[4] This definition excludes certain reactions that are thought to be inborn or instinctive, like reflex actions or innate release mechanisms where these have not undergone modification in the course of growth. It does, however, include learning which occurs without deliberate or conscious awareness, bad and good behaviour and covert attitudes as well as overt performances.

That learning is a vital activity of living things is beyond question. Every living creature in the animal kingdom learns to a certain degree and in most cases, mere survival depends upon it. Humans are no exception. What is in question is the process of learning. How do we learn? What factors determine our limits and influence our capacity to learn? Is there a threshold of practice beyond which one cannot improve? What effects, if any, do past experiences, personality and habit have on our ability to learn?

These are among the questions which psychologists and behaviourists have attempted to answer for many years. The vastness of the topic has led to a diversity of opinion and considerable debate. In order to achieve a better understanding of the learning process and development of a person, it is important to consider many viewpoints and the methods used to arrive at them.

How do we Learn?

For the purposes of this dissertation, I have explored in depth the theories of three prominent students of this area. They are Jean Piaget, B. F. Skinner and the Gestalt school of psychology. I have also considered the views of Bruner, Binet, Broadbent, Chomsky, and Wechsler in areas that are of direct relevance to this work.

Piaget's Theory on Cognitive Development.[5]

The Swiss psychologist, Jean Piaget theorises that human beings inherit two basic tendencies: Organisation (the tendency to systematise and combine processes into coherent systems) and Adaptation (the tendency to adjust to the environment). These are present in every person and are the beginning of the path of cognitive development. They legislate how we deal with new experiences, information and stimuli. The aim of organisation according to Piaget is to transform experiences into a form that a child can use in dealing with new situations; e.g. To keep the thought process in a state of balance. This balance is achieved through a process of equilibration (the tendency to seek coherence and stability).

Adaptation involves two complementary processes: assimilation and accommodation. In order to understand these, another Piagetian concept must be introduced. This is the scheme. The scheme is an organised pattern of behaviour or thought that children formulate as they interact with their environment. It can be behavioural (how to throw a ball) or cognitive (realising that there are many types of ball). When a child encounters a new experience that does not easily fit into an existing scheme,
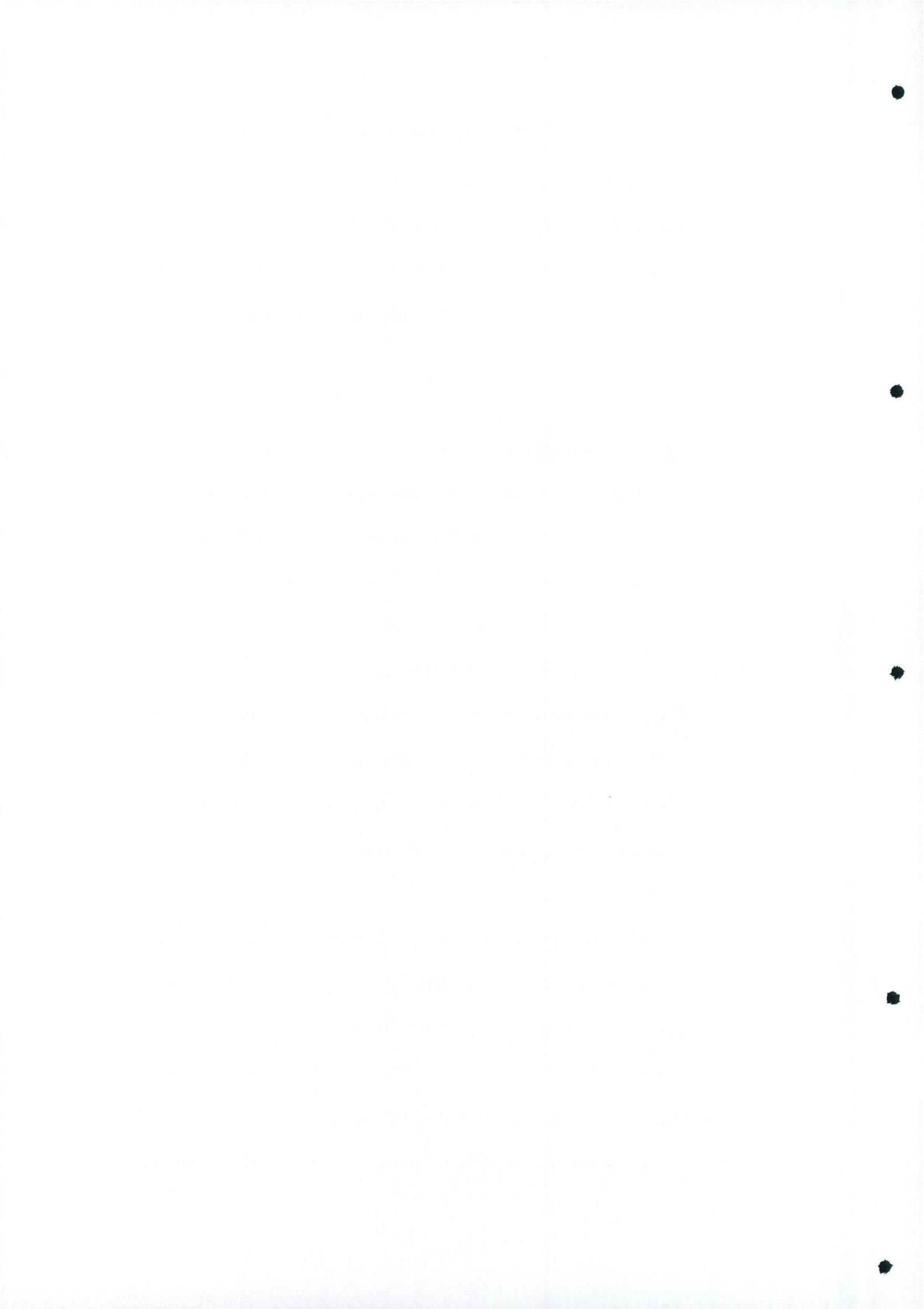
adaptation occurs. A child may adapt either by interpreting the new experience so that it does fit a scheme - assimilation, or by changing an existing scheme to incorporate the experience - accommodation.

Organisation, adaptation, assimilation, accommodation are basic Piagetian principles. Other principles are based on the observable differences in thought processes between children of different ages. These differences became apparent to Piaget by his conducting experiments on children of different ages and asking for the reasoning behind their responses. One of the most famous experiments is the glass of water experiment.

The experimenter takes a child and pours water into two identical glasses until the child agrees that both glasses contain the same amount of liquid. The liquid in one glass is then poured into a tall thin glass. At this point, the experimenter asks the child if there is more water in the tall thin glass or in the original one. Immediately after answering, the child is asked why he thinks so. Vague and evasive answers are probed until the underlying thought process becomes clear.

From this and similar experiments, Piaget concluded that children below the age of six or so were unable to consider more than one quality at a time. These children stoutly insisted that there was more water in the tall thin glass and when asked why they thought so, would invariably reply-"Because it's taller." This, in spite of the fact that initially they had agreed that both quantities of liquid were equal. By contrast, children over the age of six were more likely to reply- "Well it looks as if there is more water in the taller glass but they are really the same."

Piaget proposes three principles to account for this dramatic difference in thinking between younger and older children.
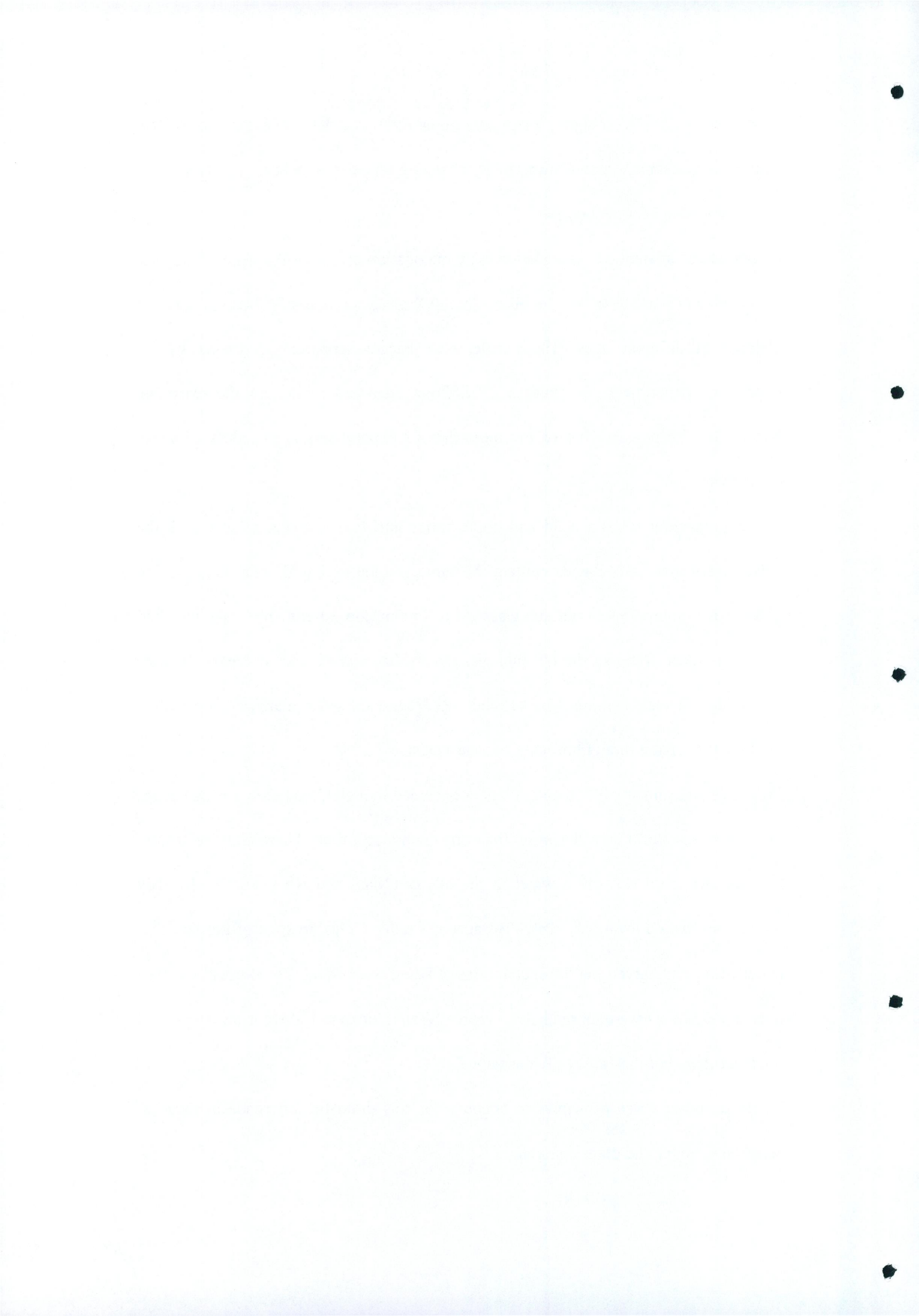
1. Conservation - This refers to the ability to recognise that properties (volume and mass, etc.) stay the same despite changes in appearance.

2. Decentration - This refers to the ability of a child to consider more than one quality at a time (the younger child equates height with 'bigness' whereas the older child considers both height and volume).

3. Operation - "an interiorised action which modifies the object of knowledge"[6]. This refers to the way conservation is mastered. The most distinct aspect is reversibility, i.e. awareness that conditions can be mentally reversed. (The older child may solve the water experiment by mentally pouring the water from the tall glass back into the original one.) Thus an operation may be described as a mental action that can be reversed. Throughout his experiment, Piaget also recognised one other interesting tendency in young children (below 6yrs), and that was an apparent difficulty in seeing things from another persons perspective. He referred to this as 'Egocentric Thinking' which he defined as the inability to take another's perspective.[7]

After interviewing many children, Piaget concluded that there are recognisable stages of cognitive development that follow the same sequence in all children. While there is no definite 'jump' between stages, and the rate of change varies in individual children, the pattern of development follows the path described below in all children.

Stages of Cognitive Development

Sensorimotor stage (0-2yrs)

The child moves from pure reflex activity to the ability to see cause and effect relationships, to use trial and error experimentation, and to think through actions required to gain desired ends. He moves from complete egocentricity to an awareness of the presence of others. He is now ready to act in a symbolic and representational rather than a purely sensorimotor arena.

Preoperational stage (2-7yrs)

Symbolic thought becomes possible; the child can think beyond immediate motor and perceptual events. Language develops rapidly, providing additional means to manipulate thought. Throughout this period, the child relies more on perceptual input (how something looks, feels, and so forth) than on what his thinking processes tell him to be true. Overall, this is a repetition of the sensorimotor period except that it relates to symbolic rather than motor functions.

Concrete Operational stage (7-11yrs)

The child accomplishes a number of logical operations, which form the base for formal operations. These include transformations, reversibility, conservation concepts, and classification. He can use logical thought to solve problems relating to concrete objects and events and is becoming an increasingly social, communicative being.

Formal Operations (11-14 or 15yrs)

The individual reaches full cognitive potential. He is able to reason through areas of concern with which he has basic familiarity. (This does not indicate that he uses logical thought in all activities but that the potential to do so is present.) The ability to formulate and test hypotheses is present, and all that remains is the accomplishment of

a broadened base of information, more practice in using cognitive abilities, and an appreciation of realism (how the world actually works as opposed to what logically should be true).[8]

This then is basically the theory on cognitive development as proposed by Jean Piaget. It is not a theory of learning, but more one that attempts to explain the development of the human mind in the course of it's maturation. While certainly an extremely important and much referred to cognitive theory, it is not the only one. Another, important cognitive theory was proposed by the 'Gestalt' school of psychology.

The Gestalt School

The Gestalt school consisted of three German psychologists, Wolfgang Kohler, Kurt Koffka and Max Wertheimer ,who examined cognitive issues between 1910 and 1930. The German word 'Gestalt' can be translated as form or pattern or sometimes as configuration . While behaviourists conceive of leaning as the adding together of associations, the Gestalt theory calls attention to the fact that many things are learned when we arrange ideas into patterns. Gestalt psychologists agree that perceptions are influenced by the way stimuli are arranged. Four arrangements seem to be of primary assistance in recognising and determining the dominant pattern of the figure in order to form a 'good' perceptual patterns is referred to as the Law of Pragnanz. The four arrangements are similarity, proximity, continuity and closure.

Similarity

When a figure consists of similar elements, one tend to group them to form a pattern. Details such as similar shape, size and colour tend to be grouped.
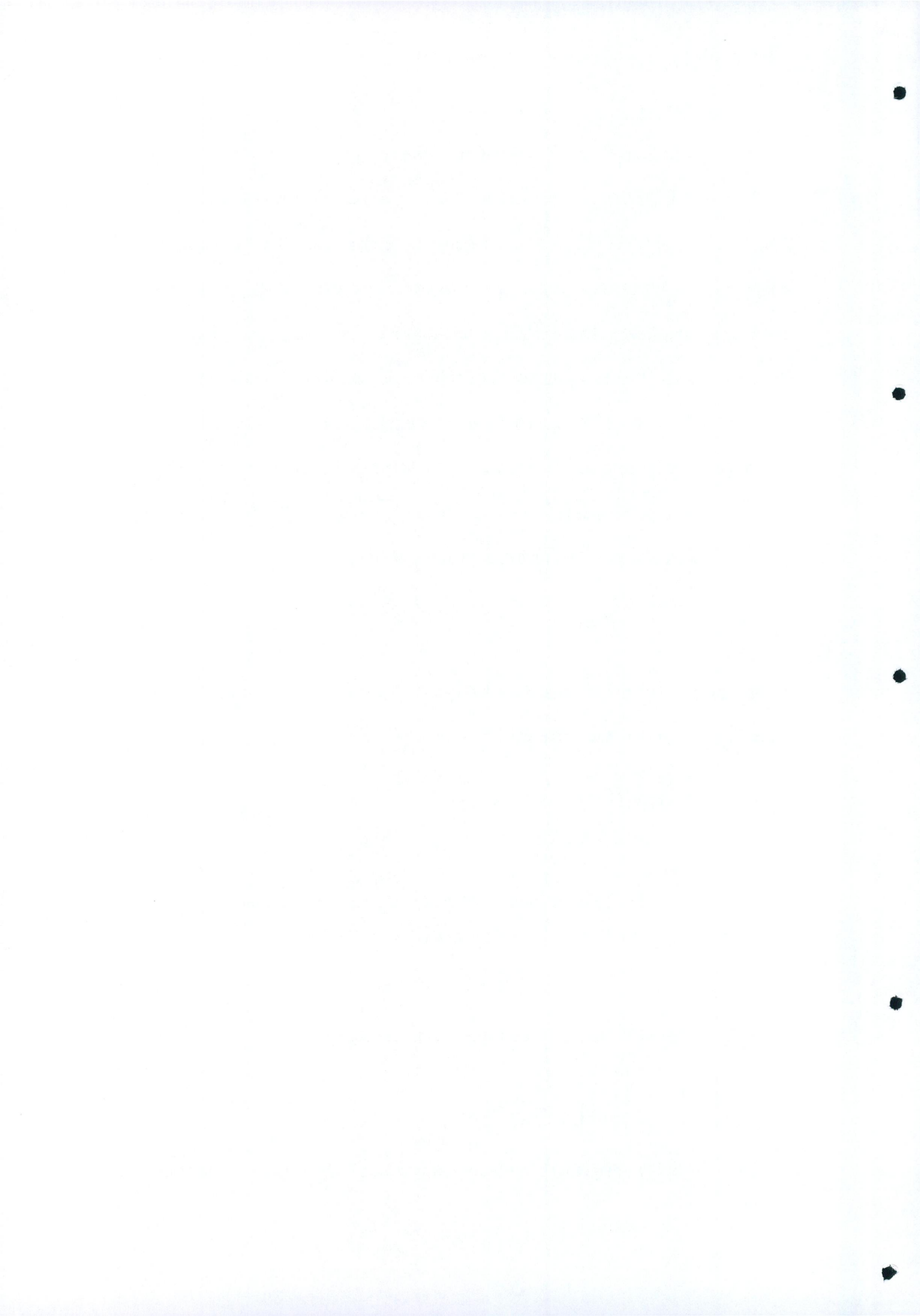
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X O X O
X O X O
X O X O
X O X O
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One tends to view the above diagram as columns of x's and o's rather than as rows of xoxo.

Proximity

Proximity applies where similar objects appear close together.

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One tends to view this diagram as five groups of two lines rather than ten single lines.

Continuity and Symmetry

Similar parts of a figure which appear in lines (straight or curved) tend to stand out.
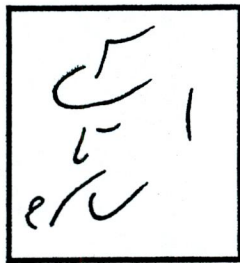
```
X X X X
X       X
X       X
X X X X
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One tends to view the above figure as a square and not as twelve individual x's.

Closure

Closed or partially closed figures are more readily perceived than open figures, except when the open figure has an acquired meaning (e.g. letters. The letter C is open but is recognised as a letter).

Closure

This figure tends to be perceived as a face rather than a random series of symbols. One tends to mentally close the figure.

The principle behind this perceptual tendency also applies to behaviour. People tend to want to close discussions and activities, and to find solutions to problems.

Gestalt psychologists also pointed out that our perceptions are influenced by past experiences and current interests. If, for example, a diverse group of people were asked for their perception of the meaning of a word, the results will vary.

For example, if a sporting person was asked to explain his initial reaction to the word field, it might conjure up an image of a playing field. With an historian, it may be a famous battle field, with an artist, a design, with a rural person, a field of corn and so on.

A cognitive psychologist would probably think of a field of forces. In attempting to explain how physical forces work, physicists developed the concept of the force field. (Most easily demonstrated by observing the patterns that iron filings arrange themselves in around a bar magnet.) Gestalt psychologists believe that psychological patterns are influenced by positive and negative forces acting on humans and thus their school of psychology is sometimes known as field theory.

In learning, Gestalt psychologists believe that learning must principally involve organisation of the material. This was to lead to a better understanding of the context within which to work and thus, more effective learning. They also believe that information should be dealt with in large chunks and that insightful learning occurs with a sudden and immediate, repeatable and transposable flash of inspiration.[9]

In 1982, Morris L. Bigge[10] made systematic attempts to base teaching techniques on Gestalt principles. He felt that instruction should be arranged so that students participate actively in developing insight by attacking a problem posed by the teacher. Instead of presenting students with information discovered by others, Bigge urges teachers to arrange learning situations so that students could make their own discoveries.

One of the most renowned critics of these theories was a behaviourist called B.F. Skinner. Skinner argued that this discovery theory taken in it's purest form would mean that all discoveries made by others would be ignored and students would have to
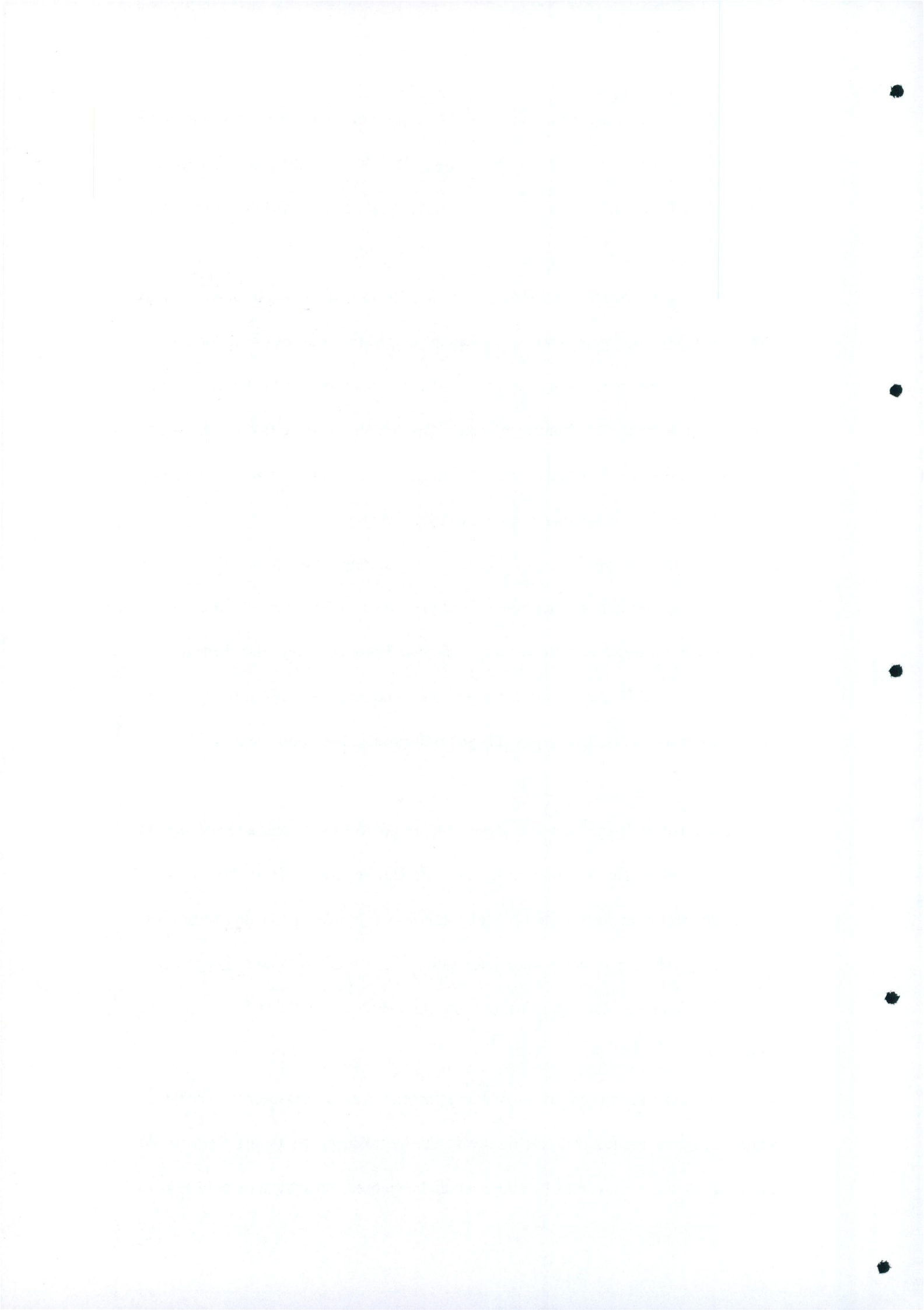
discover all previously known information and knowledge themselves[11]. He argued that as genuine discoveries occur very rarely, very little would be accomplished in a class of school children. He proposed his own theories based on experiments and research he conducted himself.

B.F. Skinner

Behaviourists are chiefly concerned with stimulus-response connections. These stimulus-response links are only of importance when they can be manipulated and the results observed. The individual develops certain responses to given stimuli and inferences are made by direct observation and manipulations of these human and animal behaviours.

B.F. Skinner (B. 1904) has been one of the most influential American psychologists of the twentieth century. In his studies of behaviour therapy, his main interest , like fellow behaviourist, Pavlov, was in conditioning. However, Skinner theory differs significantly from Pavlov's in that the emphasis is on operant conditioning.[12]

In order to understand Skinner's theory, it is essential to briefly examine some of his experimental laboratory tests. Initial laboratory experiments involved hungry rats being placed in 'Skinner boxes.' These boxes contained a system of levers, which when pressed would cause a food pellet to be released. Exploratory activity by the rat in the confined space would usually end up with a chance encounter with a lever. After 2 - 3 accidental lever contacts, the rat would display a dramatic change in behaviour by intentionally pressing the lever to obtain food.

What this is recognised as is an example of trial and error learning. The rat's instrumental or 'operant' behaviour produces it's own reward or reinforcement by converting a productive pattern. Operant conditioning therefore involves a voluntary response strengthened by reinforcement. The pattern of response is shaped by schedules of reinforcement:

-if the rat is rewarded every time, he quickly gives up after the food supply is cut off. (continuous reinforcement)

-if the rat is rewarded at irregular intervals, the operant behaviour is very resistant to extinction.(intermittent reinforcement) [13].

Skinner broke intermittent reinforcement down into two headings in his rat tests.

(1) **The Fixed Ratio schedule**

A food pellet is released every thirty presses of the lever. The rat then engages in rapid bursts of activity, hitting the lever repeatedly until a pellet appears, eating it and then repeating the process.

(2) **Fixed Interval Schedule**

A food pellet is released at fixed time intervals, say every 5 minutes. The rat soon realises this, so he lounges by the lever for the first 3 - 4 minutes and then starts to press the lever until a pellet appears. He then repeats the process of lounging etc.

Skinner also tested the effects of aversive stimuli. In these tests, a rat was subjected to a disagreeable shock from an electrified grid until it pressed the lever. It was found that the rat learned faster under such negative reinforcement than under positive reinforcement. However, the learned responses became extinct rapidly after removal of the negative stimulus. Positive reinforcement was found to be a slower learning process, but it produced learning that was more resistant to extinction. Negative reinforcement was also found to lead to negative associations. (The shocked rat exhibited signs of fear when placed in the Skinner box.) As a form of punishment, negative reinforcement was used to eliminate selected types of behaviour. The
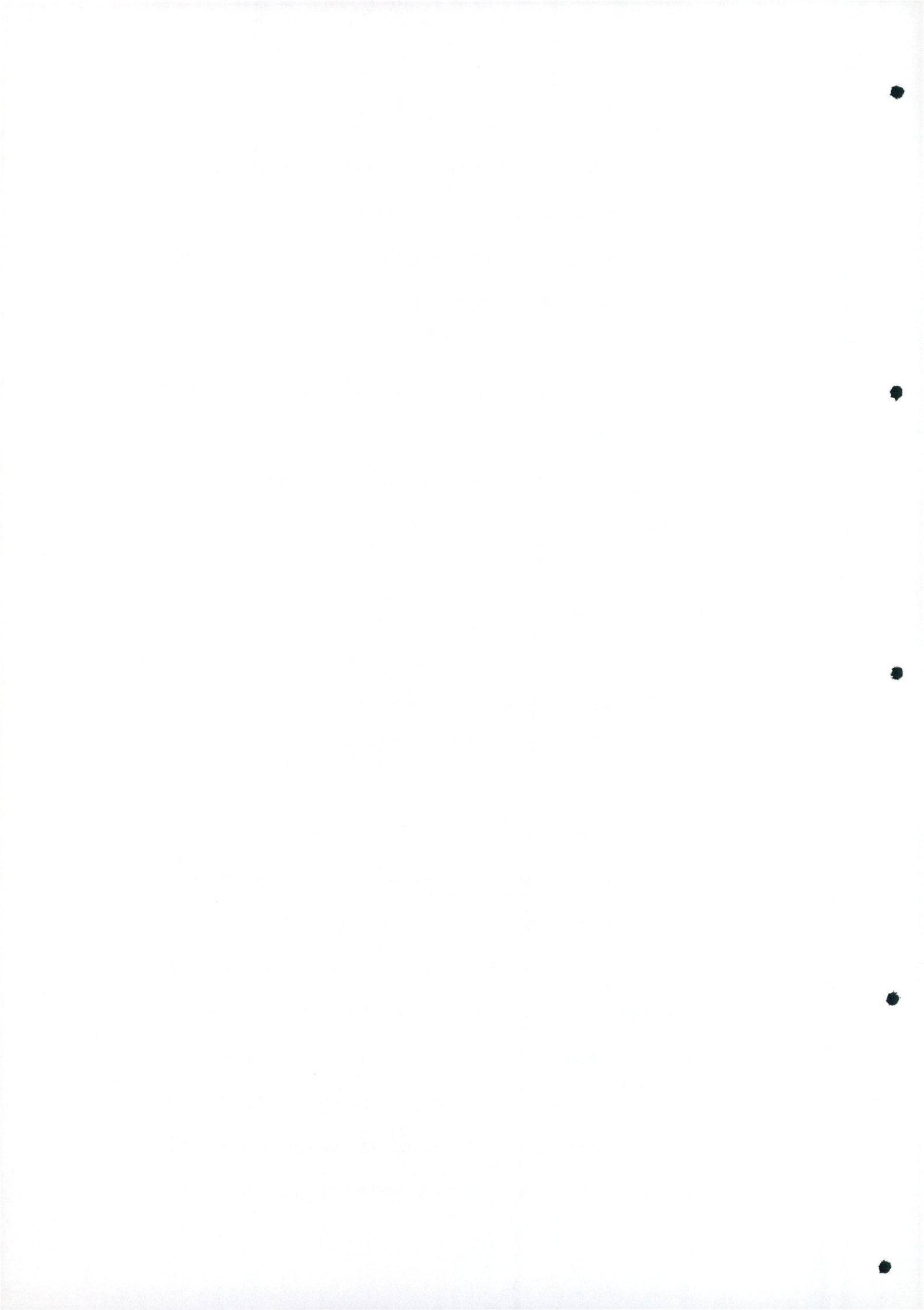
punishment weakened undesired behaviour by presenting a negative stimulus after it had occurred.

The basic principle of learning derived from such experiments is that movements can be shaped[14] if actions that move progressively closer to the desired terminal behaviour are reinforced. The key to success is to take one step at a time. The movements must be gradual enough so that the organism becomes aware that each step in the sequence is essential[15]. If the trainer goes too fast, the organism is likely to become confused part of the way through the performance and engage in trial and error behaviour.

Skinner personally felt that as far as contemporary teaching practices go, they were ;

(a) Terribly confused and inefficient,

(b) Primarily negative, in the sense that most children study to avoid negative consequences.(e.g. Failing an exam)

He was bothered by the fact that there was always a substantial interval between pupils answering problems, or completing work, and when they received feedback. He also observed that lessons and workbooks were often poorly organised and did not seem to lead to any specific goals. In 1968, Skinner published 'The Technology of Teaching.'[16] His basic recommended technique was for programmed learning. The two basic considerations of programmed learning are:

(1) The gradual elaboration of extremely complex patterns of behaviour.

(2) The maintenance of the behaviour in strength at each stage.

According to Skinner:

> The whole process of becoming competent in any field must be divided into a very large number of very small steps, and reinforcement must be contingent upon the accomplishment of each step...By making each successive step as small as possible, the frequency of reinforcement can be raised to a maximum, while the possibly aversive consequences of being wrong are reduced to a minimum.[17]

III. Factors that influence learning.

While cognitive and behaviourist theories explain to us how the human mind organises and processes information, there are several other factors that have a bearing on how the human mind actually stores and learns information. In teaching a pupil with average abilities, it is important that these other factors are understood. With a student with a learning disability, it is essential, as it is often a problem with one or more of these factors that contributes to the learning problem. This chapter deals comprehensibly with these factors that influence learning.

Sensation, Attention & Perception

Before going on to discuss attention and perception, it is firstly important to distinguish between three terms which are frequently confused. They are; Attention, Perception, and Sensation. Although these three terms are defined separately, it is clear from definitions that they are closely connected and constitute an integral part of human information - processing.

(1) Sensation is said to occur when any sense organ (eye, ear, nose etc.) receives a stimulus from the external or internal environment. This can and frequently does occur without our knowledge. For example; Sound waves impinging on the ear drum and causing a disturbance which one does not register. If one listens attentively for a moment, many sounds which would have passed one by if they had not been searched for, are discovered.

The ability of human beings to process some part of the incoming sensations and to ignore everything else is referred to as attention.[18]

Attention

Above, I have described attention in a very specific fashion. This definition refers to selective or voluntary attention: I.e. when the individual is actively seeking some signals and ignoring others. However, sometimes our attention is demanded rather than controlled and this is referred to as involuntary attention. For example, when one hears an unusual sound or sees contrasting colours on a blackboard.

At the beginning of this century, W. James[19] generated considerable interest in attention among psychologists. His insights into processes of attention and perception served until the 1950's when Broadbent[20] revitalised interest with his seminal researches and speculations. Broadbent deals essentially with selective attention.
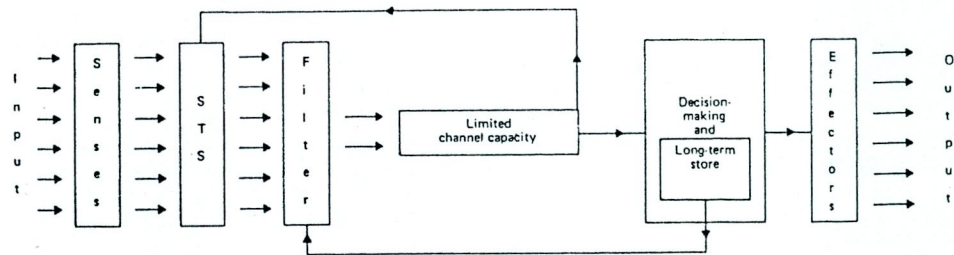
Broadbents Filter Theory

Diagram: Adapted from D. E. Broadbent. Perception and Communication, Pergamon, London, 1958. (STS = short-term store)

This model is basically taken from communication theory, and it attempts an explanation of how selective attention is managed. The sense organs and nervous system receiving and transmitting impulses are referred to as the input channels. Several input channels are operating simultaneously and in parallel. However, the amount of information passing along the channels is far too much for the brain to cope with at any one time. This is because overloading would occur if all the information was assimilated.[21]

Thus, to regulate the intake, Broadbent supposes that there is a filter followed by a bottleneck (limited capacity channel) which selects some of the incoming impulses for processing in the brain. The input not selected may be stored in a short-term memory storage system and can be taken out again, provided this is done in a short space of time. (a few seconds at the most.)
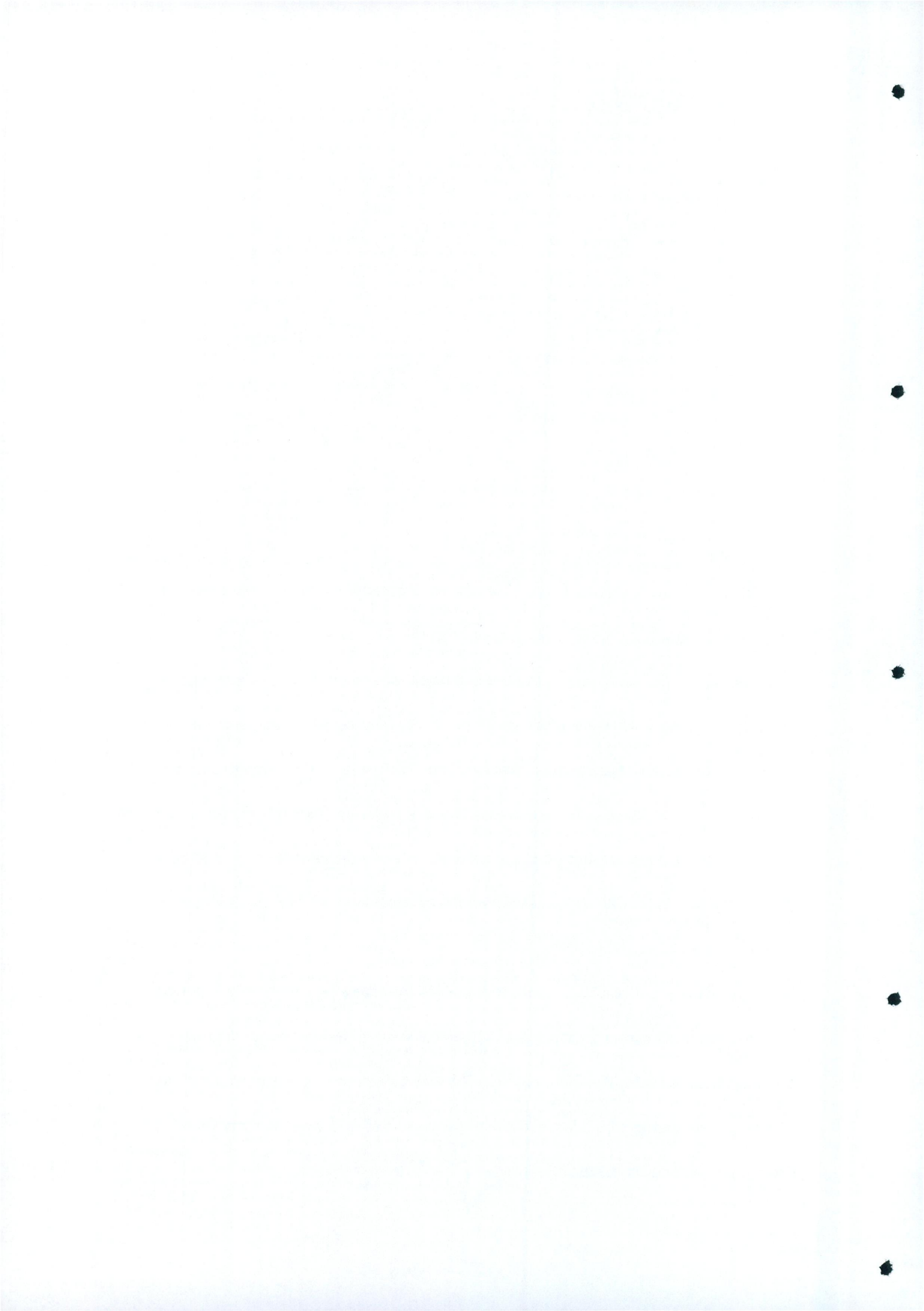
Stored input signals grow weaker with time. When a 'line becomes available', for one impulse, through the limited capacity channel, the remaining stored impulses suffer a further weakening effect. The phenomenon of short term memory accounts for both ones ability to recall a very recent incident and the deficit in information when it has been stored for a short time, compared with the moment of reception. In other words, one has a temporary and limited capacity for remembering events which one has not given immediate attention to.

Several modifications have been recommended to accommodate subsequent research findings. For example, the model assumes that selection of input takes place before the interpretation of it's meaning, which confines the selection to the physical sensory characteristics. Treisman[22] questions this stage and argues from her research that a more complex analytical mechanism operates to filter out levels of increasing complexity.

Factors which influence attention.[23]

Workers in the field are agreed that both the observer and the stimulus possess characteristics which are likely to influence attention. The following are of particular relevance to the teacher. For convenience they are divided into external and internal factors.

External Factors

The most important are as follows:

(1) Intensity of a stimulus - Loud noises, bright colours, strong odours and high pressure on the skin are all compelling stimuli.

(2) Novelty - An unusual or irregular event is likely to attract ones attention. Words highlighted or printed in italics are so in order to make them stand out and catch our attention.

(3) Variable or changing stimulus - Intonations in the voice will keep attention focused on the speaker. Wall charts and visual aids in the classroom, if changed regularly, will continually attract the children's attention.

(4) Regularity of stimuli presented in space (spatially) or time (temporal) has an effect on attention. Distributed presentations, again to avoid becoming adapted, have a better chance of becoming noticed than rapid, regular presentations.

(5) Colour - Certain colours are more attractive than others. Developing infants are more interested in coloured objects than black or grey ones.

(6) High pitched sounds - High sounds command more attention than low sounds when the two are presented simultaneously.

(7) Conditioned/Habitual stimuli - Example; a persons name, which is a condition stimulus will instantly command the attention of that person when it is heard in conversation.

(8) Cue - This involves the deliberate use of cues (such as - 'watch this…' or 'note that…') by a teacher to command the attention of a class. Physical cues like pointing also fall into this category.

Internal factors

(1) Interest - or lack of it. Events in which a person has already gained an interest are more likely to attract attention than events which have not previously been of interest.

(2) Physical or social deprivation pertaining to basic human needs. - Sensory deprivation for any length of time can have a disorientating effect.[24] Extreme deprivation frequently leads to excessive orientation of all the senses towards the satisfaction of the deprived need. For example, a person starved of food will

ultimately have hallucinations about, and direct all physical and mental energies towards food[25].

(3) Fatigue - Fatigue has a detrimental effect on attentiveness. As our physical reserves become depleted, so too do our mental reserves. A child who is short of sleep or exhausted from strenuous physical or mental activity is unlikely to attend in class.

(4) Arousal - Attention is increased by arousal usefully up to a certain point called the optimum level. Beyond this, as arousal increases, attention is adversely effected. (i.e. stressed out, flustered).[26]

(5) Attention needs - Curiosity, exploration and manipulation are influential in directing attention.

(6) Expectation - Ones attention is drawn to events one expects.

(7) Personality characteristics - Extroverts need more involuntary rest pauses when performing tasks requiring concentration. The levels of stimulation required for one to be aware of a stimulus tend to be lower in introverts.[27]

Receiving and attending to a stimulus is not the complete situation. One also needs to interpret the selected sensations in the light of the present and ones past experiences. This internal analysis of sensations by the brain is termed perception.

(3) Perception

One cannot help making sense of the world. How this might be done varies from one person to another. Basic sensory signals from objects are the same, but we apprehend them differently because of the circumstances in which similar sensory experiences have occurred. As Kurt once said, "We see things not as they are but as we are."

In effect, we impose structure on our environment by building models from our sensory experience.

In doing this, we scan a scene or listen to sounds and pick out particular features which become the 'figure'. The background against which the figure is observed is known as the 'ground'.

Thus, in identifying a shape, the contour outline is the most important. It is probably aspects of the figure which pass through the filter to the brain and the immediate ground which is stored temporarily in the short term memory.

Figure-ground discrimination applies in all the sense modalities. E.g. Music can be picked out and understood against a background of other moderate sounds.

When one tries to discriminate one taste from another, they successfully take on figure and ground by conscious selection.

Diagram (a) *Figure-Ground reversal*
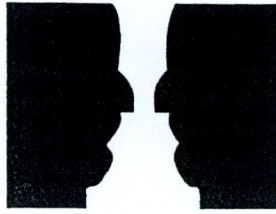
Attempts to find a figure against a background are usually not difficult, but occasionally we can be deceived.

Diagram (a), is seen as a candlestick in one instant and in the next as a side view of two faces looking at each other. Note the decisiveness with which the figure is either a candlestick or faces, and not a mixture of both. We automatically select a figure. When it is candlestick, the brain fills in the lines at the top and bottom. One may even get the impression that the candlestick is of a brighter nature than the surrounding white page, so strong is the tendency to distinguish figure from ground in terms of previous models. (In this case, a candlestick).
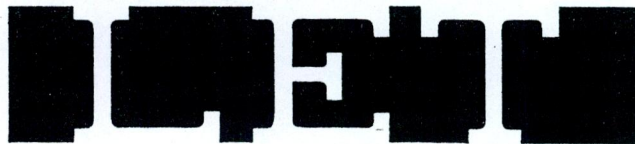
Diagram (b)

Diagram (b) has a similar effect. One may first notice only meaningless shapes, like a plan of a housing estate, but it should transpose into a word which will suddenly leap out of the page when one realises what it is.

The nature of perception.

Theories on how we establish perceptions and how things appear to us are of two basic kinds. Firstly, it is commonly believed that, apart from in-built tendencies to distinguish figure and ground, we gradually learn to identify and interpret objects or arrangements of objects.[28]

The second and more widely used view was proposed by the Gestalt school at the beginning of this century. That is, that perceptual organisation is inborn. Gestalt theory, as explained earlier, emphasises our ability to perceive patterns as wholes. We perceive and give meaning to objects by their characteristics in toto and not by considering a jumble of the parts which go to make up the total figure.

Memory and learning

It is clear that memory and learning are interdependent. Many psychologists recognise that there are two types of memory that are directly relevant to learning- short term and long term.

All information, to which attention is paid that is received by the senses enters the short term memory where it is stored for a short time (a few seconds). From here, it may either be forgotten (like a telephone number looked up in a directory is mostly forgotten the moment it is dialled), or it may be transferred to the long term memory. Broadbents filter theory, as explained earlier, gives a comprehensive explanation of how this process works.

For the teacher, however, what is crucial is maximising the amount of information that is effectively stored by the student. David Fontana of the University of Cardiff proposes some techniques.[29]

(1) Pausing, repeating and questioning: Each allows the child to dwell sufficiently on the information to allow the transfer from short to long term memory.

(2) Relevance and interest: Children best remember that which appeals directly to experience and feelings.

(3) Attention span: Children's attention tends to wander easily and when this happens, the material is neither listened to or remembered. A rough rule is that the teacher can expect to hold the attention of a child, even with interesting material for 1 to 1.5 minutes for each year of the child's age. (e.g. 10 to 15 minutes for a class of ten year olds.)

(4) Practical use: Information that is put to practical use is better remembered than material which is not.
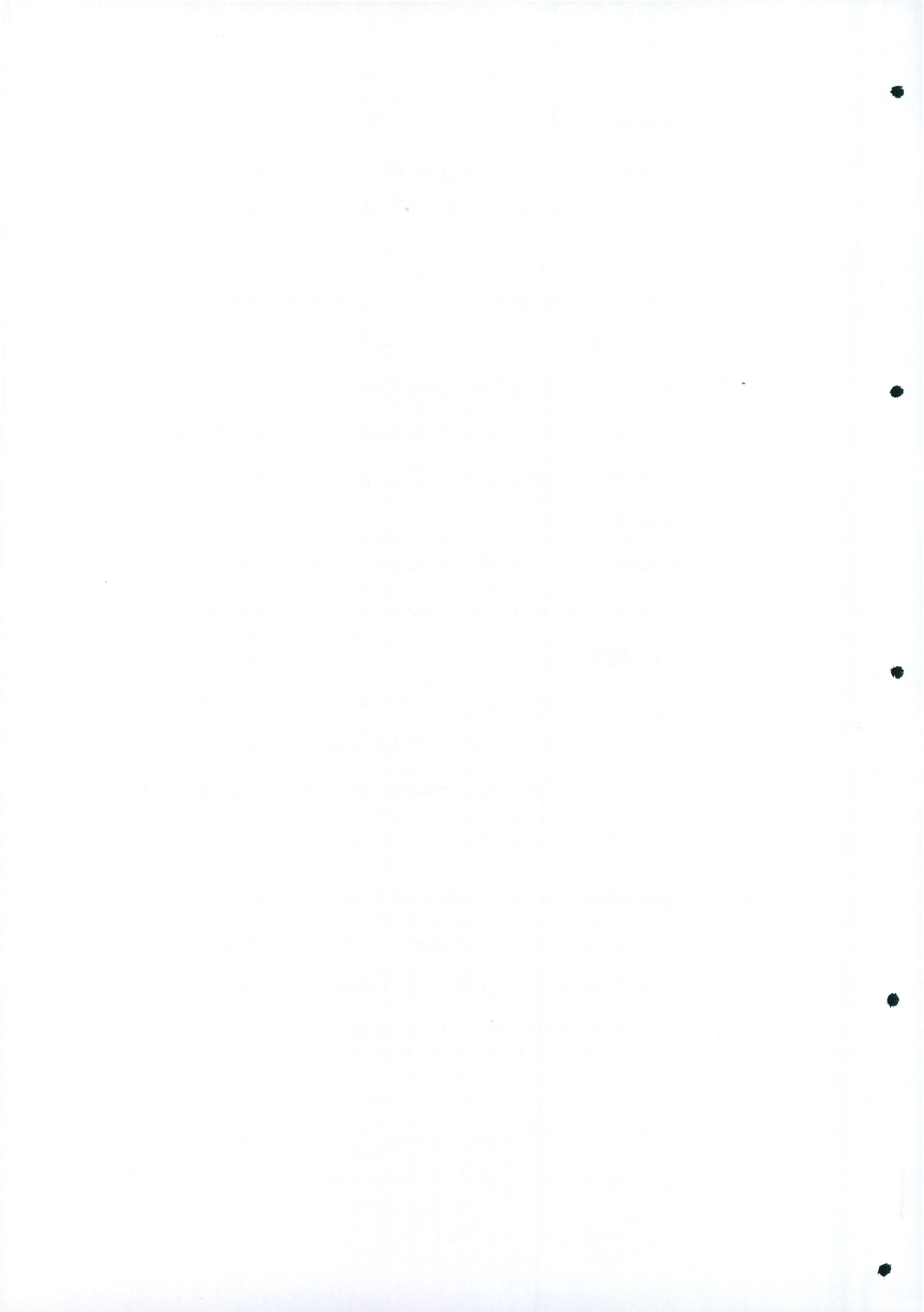
(5) Meaning: Information that is understood by a child is more easily remembered.

(6) Over-learning: Skills or knowledge that children practice and revise after they got them to perfection persist in the memory.

(7) Association: Unfamiliar material is remembered if it is related to something familiar. Visual association through the use of visual aids is particularly important.

(8) Recognition and recall: There appears to be a functional difference between recognition (where we spot a familiar stimulus i.e. a familiar face.) and recall (where we have to retrieve some word or fact from memory, i.e. the person's name.). Recognition comes more readily than recall and, in consequence, where practical, the teacher should aid children's recall by providing appropriate recognition clues.

(9) While these suggestions aid long term memory, there are several that can interfere with it. Retroactive interference occurs when recently learned material appears to inhibit the recall of that material learned earlier. It is apparent in students, for example, who cram for an exam and find that the facts they learned the night before interfere with the recollection of facts studied previously.

Proactive interference on the other hand occurs when earlier learning seems to block the recall of later learning. For example, when a child learning a second foreign language finds it difficult to recall a word because the equivalent in the first language keeps coming to mind. Proactive interference usually disappears as new material becomes more familiar and over learning takes place.

Intelligence

Intelligence is difficult to define; there is no universally accepted definition. In 'Psychology for Teachers', David Child defines it as:

> The ability to see relationships and to use this ability to solve problems , than we can see that there are few aspects of a child's formal work in school that do not appear to be influenced by it in some way.[30]

In 1958, David Weschler defined it as:

> The global capacity of the individual to act purposefully to think rationally and to deal effectively with his/her environment.[31]

Heim prefers to refer to 'intelligent activity' and defines it as consisting of:

> Grasping the essentials in a given situation and responding appropriately to them.[32]

The word 'intelligent' has developed some unfortunate implicit meanings over the years. A lot of people appear to be under the impression that it is something of a fixed quantity in ones head. Intelligence quotient (IQ) is probably responsible for conveying this impression of intelligence as a quantity.

T.R. Miles recommends that we abandon the term intelligence and replace it with the less ambiguous term 'intelligent behaviour'. He felt that this would lay less stress on the activity of a person exposed to certain kinds of experience and how he/she would respond.[33]

We therefore must ask what intelligent behaviour is?

P.E. Vernon perceived there to be three broad categories for defining intelligence. They are: **(1) Biological (2) Psychological (3) Operational**[34]

(1) **Biological-** Biological intelligence emphasises the individual's capacity to adjust to environmental stimuli. 'Adaptation' here refers to modifying behaviour either overtly or covertly as a result of experience. There is something of this definition in the work of Piaget. Hebb also maintained that adaptation depends on the quality of neurological connections in the brain and central nervous system. (This makes me wonder.... What about some famous scholars, politicians, and creative artists who have the utmost difficulty in catering for themselves in the mundane things of life? Adapting...Low intelligence?)

(2) **Psychological-** Psychological intelligence definitions stress mental efficiency and the capacity for abstract reasoning which require the use of symbolic language. For example, Spearman defined intelligent behaviour as: "The education of relations and correlates."

This accounts for much more than the higher abstract conceptualisations prevalent in humans.[35]

(3) Operant definitions involve making detailed specifications of intelligent behaviour and finding measures of these specifications. Intelligent behaviour thus becomes expressed in terms of these measures. Miles puts it very well:

> Psychologists have desired standardised tests- it is in items in these tests which are regarded as exemplars of the word intelligent. (Exemplars are actual or possible manifestations of behaviour which are claimed to be intelligent.) Correct responses to these items shall be deemed to constitute an act of intelligent behaviour.[36]

The expression 'intelligence is what intelligence tests measure' is often used to describe the operational definition.

Deciding on the specifications of intelligent behaviour has been a problem. Reasoning tests containing analogies, synonyms, memory items and ward and number series are very common, but these may be talents that are not yet entirely susceptible to testing in the conventional ways dictated by intelligence test design. Creative thinking and writing, music or art, business acumen and cognitive development in the Piagetian tradition have not all been convincingly measured.

The Affective Factor and Self Concept

There are a number of factors within the learners themselves, some of which have been discussed. E.g. A cognitive factor such as intelligence. But there are many others of equal relevance to teachers. These include affective factors (ie. Emotional). Strictly speaking, the term 'affective' refers only to the emotions but psychologists tend to use it more broadly to cover all things related to personality.

From David Fontana's point of view, the learner's level of anxiety is of particular importance.[37] In the general classroom experience, a mild degree of anxiety can be a useful aid to learning but that too much can have an inhibiting effect and interfere with it.

Trown and Leith (1975) and Bennett (1976)[38] produced evidence that suggests habitually anxious children may find the informal classroom, where they are often unsure of what is expected of them, more anxiety-provoking than a more formal, less ambiguous environment.

Self-esteem, which Fontana defines as being "concerned with the value we place upon ourselves" as being closely linked to anxiety. Coopersmith (1968) demonstrated that children with high self-esteem consistently perform better than children of similar ability with low self-esteem.

They were also found to:

- set themselves higher goals

- show less need for adult approval

- less deterred by failure

- have a more realistic view of their own abilities
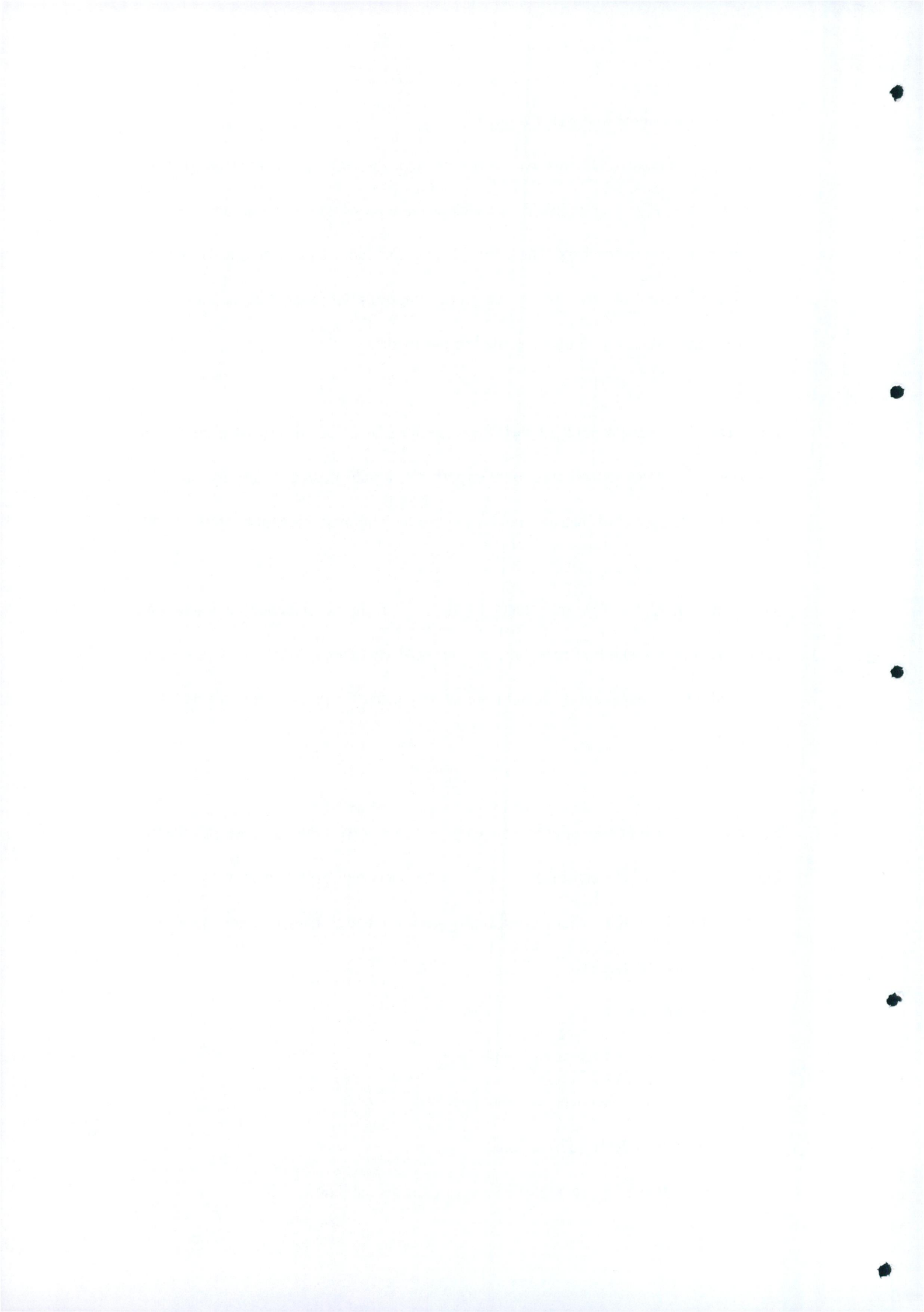
High self-esteem seems to be due for the most part to parental attention etc. However, the teacher can help to give children confidence in their own abilities; by giving them opportunities for success, by encouraging rather than censuring them when they are confronted by failure, and by demonstrating personal belief in their competence.

Comb sees the task of the teacher as being "not one of prescribing, making, moulding, forcing, coercing, coaxing, or cajoling; it is one of ministering to a process already in being. The role required of the teacher is that of facilitator, encourager, helper, assister, colleague and friend of his students."[39]

Burns defines self concept as;

> The individuals percepts, concepts and evaluations about himself, including the image he feels others have of him and of the person he would like to be, nourished by a diet of personally evaluated environmental experiences.[40]

Burns distinguishes between self concept and self-esteem which he takes to be the outcome of the processes of self-evaluation and self worth.

He identifies five aspects of self concept which he feels are important to education:

(1) What is the relationship between the pupil's self concept and his/her academic performance?

(2) What roles do feedback, reinforcement and expectations play in modifying self concept and attainment?

(3) What is the effect of different forms of school organisation on pupil's self concept?

(4) What is the relationship between the teacher's self concept and his or her classroom style?

(5) Can modifications of pupil and teacher self concepts, through counselling , intensive group work etc., be made and have these any effect on the classroom performance of pupils and teachers?

According to Biehler/Snowman there has long been a recognised relationship between self concept, motivation and achievement, the focus being on directly enhancing self concept as a means of increasing motivation and current achievement. There are at least two approaches behind such an approach.

(1) In an environment of trust and respect, for the innate goodness of students, satisfactory achievements are supposed to occur more or less automatically.

(2) There is evidence (Bachman, O'Malley and Johnston, 1978)[41] that there is a positive and moderately strong relationship between self concept and achievement.

Should teachers design their instruction to try to directly enhance self concept, or should they emphasise mastery of basic academic skills?

Scheirer and Kraut (1979) concluded that:

> Motivation for academic learning comes from the reinforcements of one's social environment for specific learned skills... (and that self concept change is likely to be an outcome of increased achievement with accompanying social approval.[42]

This means that the teacher should try and directly increase achievement. In some cases however, he/she may try and help particular students acquire greater confidence and self-esteem.

Motivation

> Satisfactory school learning is unlikely to take place in the absence of sufficient motivation to learn.[43]

For convenience, Fontana divides motivation into intrinsic forms of motivation, which come from the individual, and extrinsic forms, which are imposed by him/her by the environment.

Intrinsic motivation

Research studies (Harlow and Harlow, 1962; Charlesworth, 1966) suggest that there may be a natural curiosity drive in animals and man.

> A drive that does not appear to be directed towards an apparent end, but it is engaged in for itself and which prompts exploration and discovery at an early age.[44]

As children mature, so the response of others to this drive will help determine it's development. If attempts at exploration are met with adult disapproval and consequent frustration, then through operant conditioning, such attempts are likely to become less frequent, and be replaced by apathy or possibly by random purposeless activity.

On the other hand, if frequently rewarded and reinforced by discovery, excitement and adult approval, they are likely to continue and become more directed and productive.

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Extrinsic motivation

However stimulating the teacher, there will always be occasions when the children's intrinsic motivation is insufficient and recourse has to be made to motivation of an extrinsic kind. Such motivation (marks, grades, school reports, teacher approval) is called achievement motivation. (sometimes called need for achievement, or, nAch.)

Important considerations on extrinsic motivation at school level

(1) Instead of success, some children experience only failure (Fontana, 1984). This tends to produce either low self-esteem or a rejection of school as 'boring' or 'stupid'. It is important for teachers to provide opportunities for success at however low a level. Through this experience of success, the child gradually builds up a new self image and can be encouraged to set sights progressively higher.

(2) Sometimes motivation suffers because children have to wait too long for the results of their work . Skinner's operant conditioning model demonstrates that the longer the gap between performance and results the less efficient the learning, and the greater the likelihood that children will lose interest in the task no matter how well they may have done.

(3) Competition between children can be a useful motivator, though if it becomes too intense it can lead to harmful effects. A situation where children compete against themselves, steadily improving their performance, is often more useful.

(4) Whenever the pressures of extrinsic motivations are too strong, children may resort to strategies like cheating, absenteeism, and feigned illness to avoid the consequences of failure.

Maslow's Theory of Motivation

An alternative and less ambitious way of approaching motivation is to describe it rather than to try to account for it. One of the most pragmatic descriptive models of motivation is Maslow's hierarchy of needs.

Diagram: *Maslow's Hierarchy of Needs* [45]
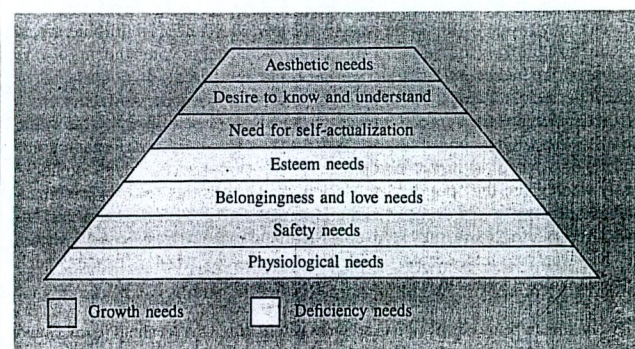
The implications are that the lower levels which consist of deficiency needs (needs associated with survival) are largely innate, while the upper levels, the growth needs, consist of innate factors combining more and more with learnt responses. One acts to get rid of the deficiency needs, (e.g. hunger) and one seeks the pleasure of the growth needs. Deficiency motivation leads to the reduction of disagreeable tension and the restoration of equilibrium. The satisfaction of deficiency needs leads to a sense of relief, satiation. Satisfaction leads to the desire for further fulfilment.

The fact that deficiency needs can be satisfied only by other people leads to dependence on the environment and a tendency to be other directed. (e.g. Seeking approval from others.) Growth needs, on the other hand, are satisfied more autonomously and tend to make one more self directed.

Deficiency motivated individuals must depend on others for help when they encounter difficulties. Growth motivated individuals are more able to help themselves.

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[1] Child. Denis, *Psychology and the Teacher*, 4th Edition, Holt, Rineheart and Winston Ltd.,London, 1986. p. 235

[2] Gearheart, Bill R*., Learning Disabilities-Educational Strategies*, 4th Edition, Times Mirror/Mosby, College Publishing, Colorado, 1985. p. 17

[3] Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990

[4] Child. Denis, *Psychology and the Teacher*, 4th Edition, Holt, Rineheart and Winston Ltd.,London, 1986. p.81

[5] 'Cognitive theories -Sets of principles proposed by psychologists to account for what happens in the minds of students as they learn'- *Psychology Applied to Teaching*, 4th ed. -Biehler/Snowman

[6] Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990. p.60

7 Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990. p.61

[8] Geareart, Bill R*., Learning Disabilities-Educational Strategies*, 4th Edition, Times Mirror/Mosby, College Publishing, Colorado, 1985. Table A-1

[9] see also Child. Denis, *Psychology and the Teacher*, 4th Edition, Holt, Rineheart and Winston Ltd.,London, 1986. p.97

[10] Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990. P. 348

[11] Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990. P.356

[12] Operant conditioning - First studied by Skinner. Basically a voluntary (or emitted) response is strengthened when it is reinforced. - '*Psychology Applied to Teaching*, 5[th] ed.' Biehler/Snowman.

[13] Extinction - Tendency for a conditioned response to disappear if not reinforced from time to time.

[14] 'Shaping - reinforce movements towards terminal behaviour' Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990.

[15] See also - Skinner's experiments with pigeons p. 298 Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990.

[16] Skinner, B.F., *The Technology of Teaching*, New York: Appleton-Century-Crofts, 1968

[17] Skinner, B.F., *The Technology of Teaching*, New York: Appleton-Century-Crofts, 1968 p.24

[18] Some psychologists use the term - orientation reaction - R.Lynn '*Attention, Arousal, and the Orientation reaction - International Series of Monographs in Experimental Psychology*' Pergamon, Oxford, 1966

[19] W. James, '*The Principles of Psychology*, Vol. 1' - Holt, New York, 1890

[20] D.E. Broadbent, '*Perception and Communication*' - Pergamon, London, 1958

[21] Child. Denis, *Psychology and the Teacher*, 4[th] Edition, Holt, Rineheart and Winston Ltd.,London, 1986. P. 66

[22] A.M. Treisman, '*Verbal Cues, Language and Meaning in Selective Attention*', Am. J. Psycholo., 77, 215 - 216 (1964)

[23] Child. Denis, *Psychology and the Teacher*, 4[th] Edition, Holt, Rineheart and Winston Ltd.,London, 1986. p.68 - 70

[24] Experiments in which subjects wear translucent goggles, gloves, long cardboard cuffs on the arms and are asked to sit still in one position find the sensory deprivation unbearable after a time.

J.P. Zubeck, *Sensory Deprivation: Fifteen Years of Research,* Appleton-Century-Crofts, New York, 1969

[25] Minnesota Starvation Studies, Chapter 3, note 28.

[26] Child. Denis, *Psychology and the Teacher*, 4[th] Edition, Holt, Rineheart and Winston Ltd.,London, 1986. p.70

[27] Child. Denis, *Psychology and the Teacher*, 4[th] Edition, Holt, Rineheart and Winston Ltd.,London, 1986. p.70

[28] D.O. Hebb, *The Organisation of Behaviour*, Wiley, New York, 1966, 8[th] impression.

[29] Fontana David, *Psychology for Teachers*, The Macmillan Press LTD., London, 1993 p. 136

[30] Fontana David, *Psychology for Teachers*, The Macmillan Press LTD., London, 1993 p. 79

[31] Lansdown, Richard. *Child Development Made Simple.*

[32] Heim A.W. *The Appraisal of Intelligence*, Slough, 1970 & *Intelligence and Personality: Their Assessment and Relationship*, Penguin, Harmondsworth, 1970

[33] Miles, T.R., *Symposium: Contributions to Intelligence Testing and the Theory of Intelligence*, Br. J. Educ. Psychol., 27 153 - 210, 1957

[34] Vernon, P.E., *Intelligence and Attainment Tests*, University of London Press, London, 1960

[35] Common example from an intelligence test to illustrate Spearman's definitions:

Find the missing word- Hand is to arm as foot is to…..

There are two statements here: hand is to arm (a), and, foot is to…(b)

The relationship we educe from statement (a) is based on our knowledge of limb attachments. Using this fact, we attempt to correlate the first part of the statement (b) with the second part, in this case 'leg.'

[36] Child. Denis, *Psychology and the Teacher*, 4[th] Edition, Holt, Rineheart and Winston Ltd.,London, 1986., p. 195

[37] Fontana David, *Psychology for Teachers*, The Macmillan Press LTD., London, 1993 p. 131

[38] Fontana David, *Psychology for Teachers*, The Macmillan Press LTD., London, 1993 p.131

[39] Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990.

[40] Child. Denis, *Psychology and the Teacher*, 4[th] Edition, Holt, Rineheart and Winston Ltd.,London, 1986. p. 224

[41] Bachman, J. G., O'Malley, P. M., and Johnson, J. *Youth in Transition. Vol. VI. Adolescence to Adulthood: Change and stability in the lives of young men.* Ann Arbor: Institute for Social Research, 1978.

[42] Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990.. P. 519

[43] Fontana David, *Psychology for Teachers,* The Macmillan Press LTD., London, 1993 p. 131

[44] Fontana David, *Psychology for Teachers,* The Macmillan Press LTD., London, 1993 p. 133

[45] Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990. p. 475- From: *A Theory of Human Motivation, Psychological Review, vol. 50 (1943),* pp. 370-396

Section 2

IV. Characteristics of Students With a Learning Disability

During the time I spent teaching '2C', I became aware of some fundamental differences between their ability and the abilities of their age-mates in '2M' Both groups of students were from the same social background and were very similar in all but one way. Class '2C' were termed as 'remedial' by their school. To me they exhibited a number of characteristics that, I discovered after some research, were typical of students that are classed as having learning disabilities.

My research indicated that every person, regardless of mental ability, develops in the same way (though not always at the same rate), and that the same factors are influential in the learning process universally. However, there are certain tendencies that the student with a learning disability displays that inhibit their ability to learn under conventional tuition techniques.

As my year with '2C' progressed, a number of class traits began to recur as I wrote my teaching practice notebook, and I found, on further investigation, that these traits were typical characteristics of the student with a learning disability.

The characteristic that was most evident to me with '2C' was a low attention span in class. This inattention, basically involved an inability to focus on any one activity for the normal amount of time. According to Fontana's rule of thumb, as mentioned earlier, a class of 14 year olds should be able to attend for between 14-21 minutes without needing a break. '2C's' attention span, even when their interest in the topic

was high, were only able to pay attention for around 5 minutes. When I first came into contact with the class, I found that they were very easily distracted and their attention span was negligible.

Secondly, the students seemed to have difficulty in following instructions that I gave them. By this, I mean that the students displayed an apparent inability to follow simple oral directions. This was particularly apparent the first few times the instructions were given. I found that a simple instruction was followed by a period of inactivity by the students. During this period, I had to ask questions repeatedly about the specifics of my instructions to try and discern the nature of their misunderstandings. Using this technique, it soon became apparent, that the students had a difficulty in relating the details of my demonstrations to their work. For example, after a demonstration, when the students have returned to their work areas, I would ask questions like: "What is the first thing we have to do?" and "How do we do that ?" Only in this way can I be sure that the students understand and can follow my instructions.

Both inattention and an inability to follow directions are difficulties that were addressed in America in 1963. In that year, parents of children with a learning problem formed the Association for Children with Learning Disabilities, in order to draw attention to the scope of the problem and to seek organised assistance. They perceived the problem as comprising of four aspects:

(1) The individual has a disorder in one or more of the basic psychological processes; i.e. Memory, auditory, perception, visual perception and the oral language.

(2) The individual difficulty in learning, specifically, in the areas of speaking, listening, writing, reading and mathematics.

(3) The problem is not primarily due to other causes.

(4) A severe discrepancy exists between the student's apparent potential for learning and the student's low level of achievement.[1]

The association got the official recognition they sought in the form of The National Joint Committee on Learning Disabilities (NJCLD) in 1981. Study of the issue was commissioned, and the NJCLD proposed four important concepts that seek to define the nature of learning disabilities. They are:

(1) Learning disabilities are a heterogeneous group of disorders. (Individuals with learning disabilities exhibit many different kinds of problems)

(2) The problem is intrinsic to the individual. (Learning disabilities are due to factors within the person rather than to external factors, such as the environment or the education system.)

(3) The problem is thought to be related to central nervous system dysfunction.(There is recognition of the biological basis of the problem.)

(4) Learning disabilities may occur along with other handicapping conditions. (There is recognition that individuals can have several problems at the same time, such as learning disabilities and emotional disorders.)[2]

While many of the above concepts became obvious to me during my time with '2C', I am not qualified to judge to what degree they all apply. Factors such as central nervous system dysfunction were not evident to me, but factors such as memory, and perceptual disorders were.

The memory problem included both auditory and visual memory. The student's had difficulty in recalling details of classes, even instructions that I had given them only
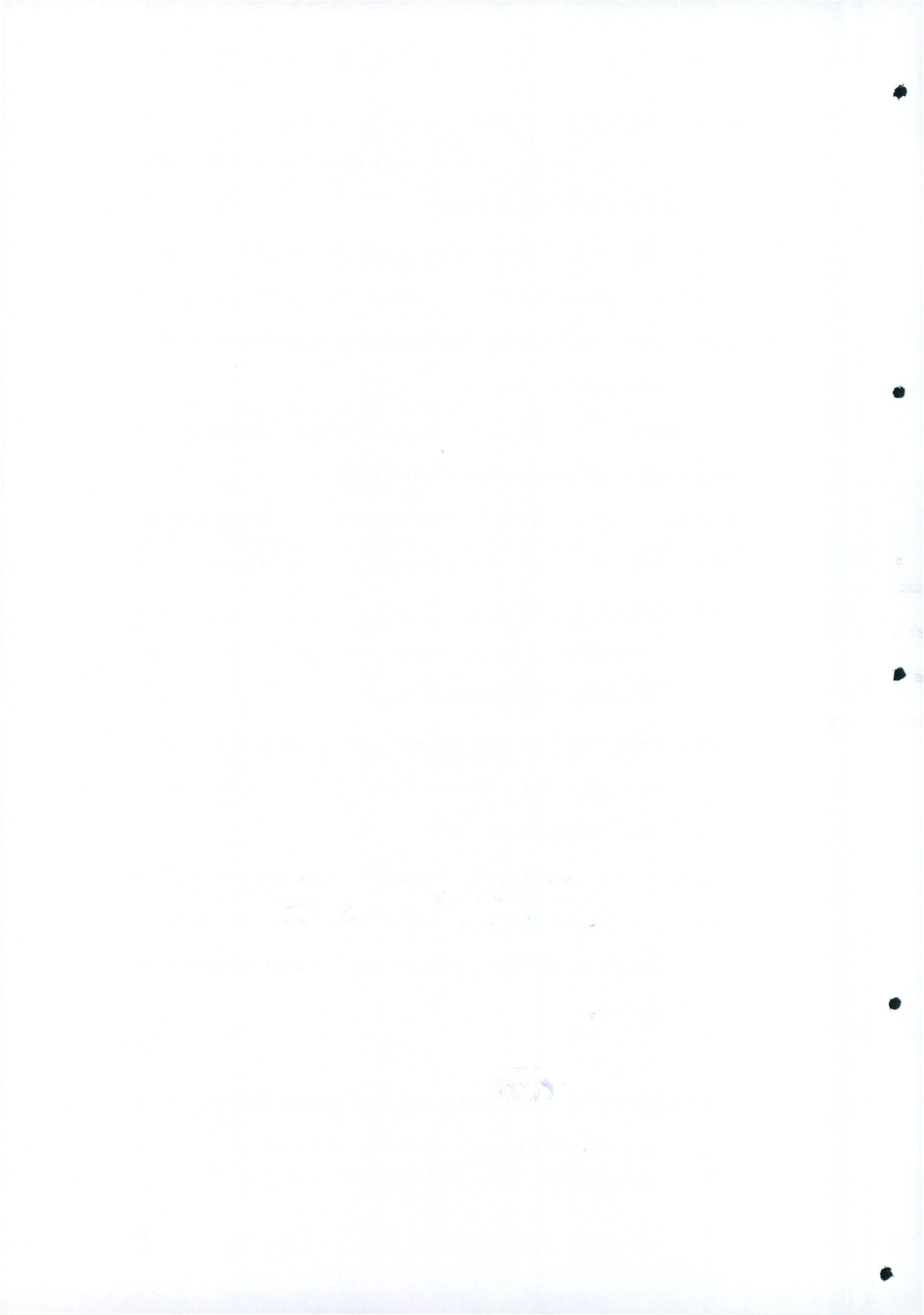
moments before. This was a contributory factor in their inability to follow directions: They simply could not remember what I had told them to do.

> Research has shown that many children with learning disabilities have difficulties in organisation, storage and retrieval of information from long-term memory.[3] (see Factors that Influence Learning p.20)

In the art-room, class '2C' displayed a lack of visual perception when compared with their age-mates in class '2M. In one of the exercises (included in the scheme described in the next section) I set them, 2C were unable to correctly draw a pathway retreating towards the horizon. While examining the work of another artist, the class was able to recognise the fact that the illustration of a retreating pathway conveys the idea of distance by narrowing as it retreats. However, when I asked them to incorporate this idea into their own work, they were unable to. A visiting examiner was present in the classroom during this lesson and he commented afterwards that their drawings were very similar to those of 8 year olds.

This immaturity was not confined to their drawing, and in general, their level of maturity was below that of the students in '2M.' My research revealed that as well as appearing immature in comparison with their age-mates, slow learners may possess characteristics typical of students with average I.Q. scores who are younger than they are. In addition, slow learners follow the same general developmental pattern as their peers but differ in the rate and degree of development.[4]

Finally, one of the main problems the students had with approaching the work I set them seemed to be one of self-esteem. The phrases "I can't," and "I won't be able

to…" were touted by the students when I asked them why they were reluctant to start working. I found that the best way to counteract these negative feelings was to assure them that they were capable and to greet each minor success with praise. Further, there seemed to be a general lack of confidence. During support studies question and answer time, students often made suggestions that sounded like they were intended as witty remarks. On questioning the student who had made the remark, about their reasoning, I generally found that it was quite relevant when the actual intent became clear. It seemed that the students lacked the confidence in their own opinions to make genuine suggestions, and resorted to covering them up using wit, to save face if they missed the point.

In general, class '2C' were impatient and easily frustrated by their apparent lack of ability. Outbursts of anger and frustration were very common when I first started working with the class, and a tendency toward impulsive behaviour was present always. In answering questions, the students were likely to shout answers that were obviously ill thought out and quite irrelevant, obviously the first thing that came into their head.

The class suffered from a high rate of absenteeism during my time with them. The general atmosphere in the classroom was often heavily influenced by the behaviour of one or two students. Bearing all of these factors in mind, I devised the 'Woodlands' scheme to teach the students some basic concepts.
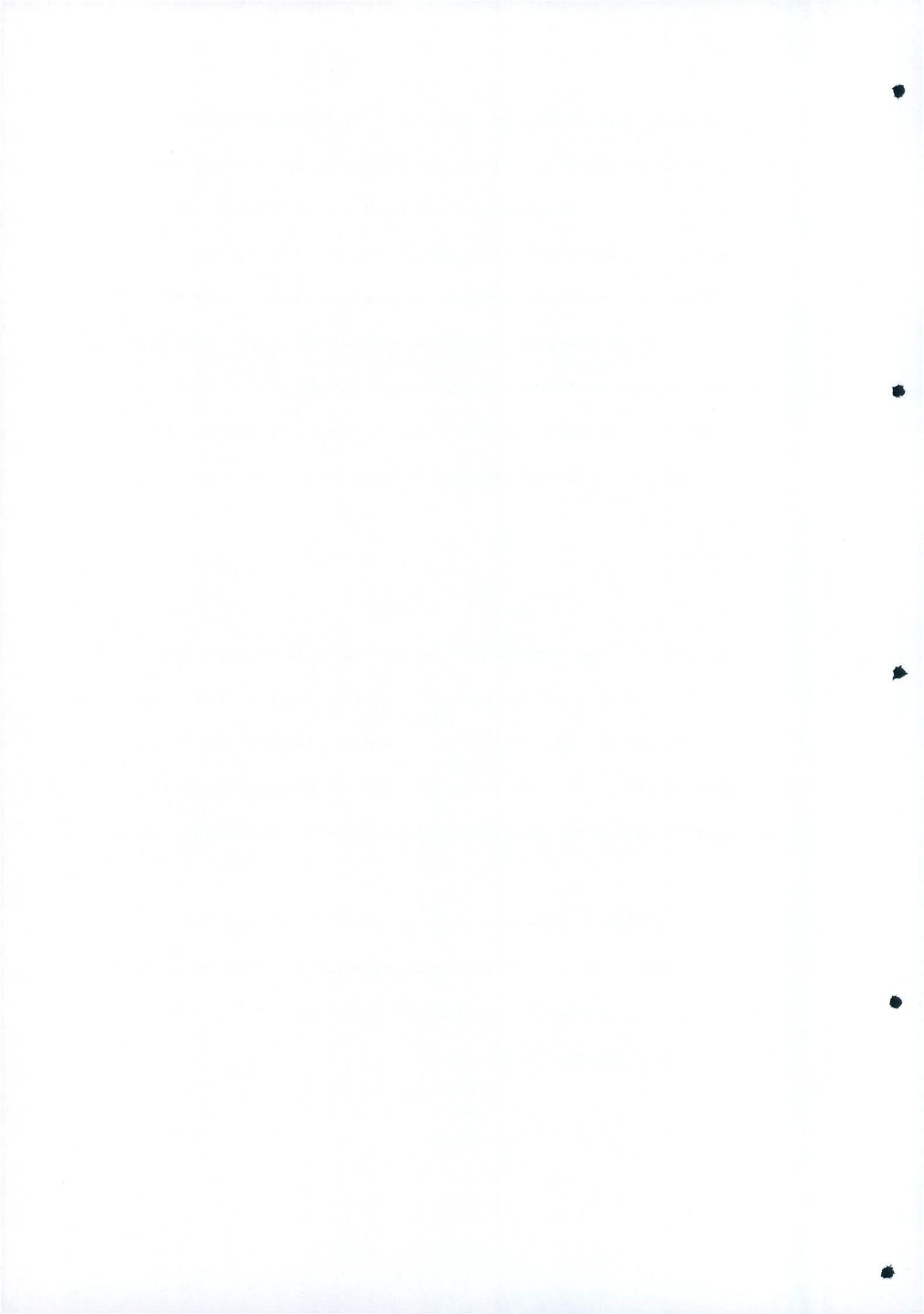
[1] Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990.. p. 188

[2] *National Joint Committee on Learning Disabilities (NJCLD),* Hammill, Leigh, McNutt, and Larsen, 1981

[3] Trepanier, M.,& Liben, L. (1979). *Normal and learning disabled children's performance on Piagetian memory tasks.* Paper presented at the Biennial Meeting of the Society for Research in Child Development: San Francisco.

[4] Biehler R. F., Snowman J., *Psychology Applied to Teaching*, 5th Edition, Houghton Mifflen Company, New York, 1990.. p. 201
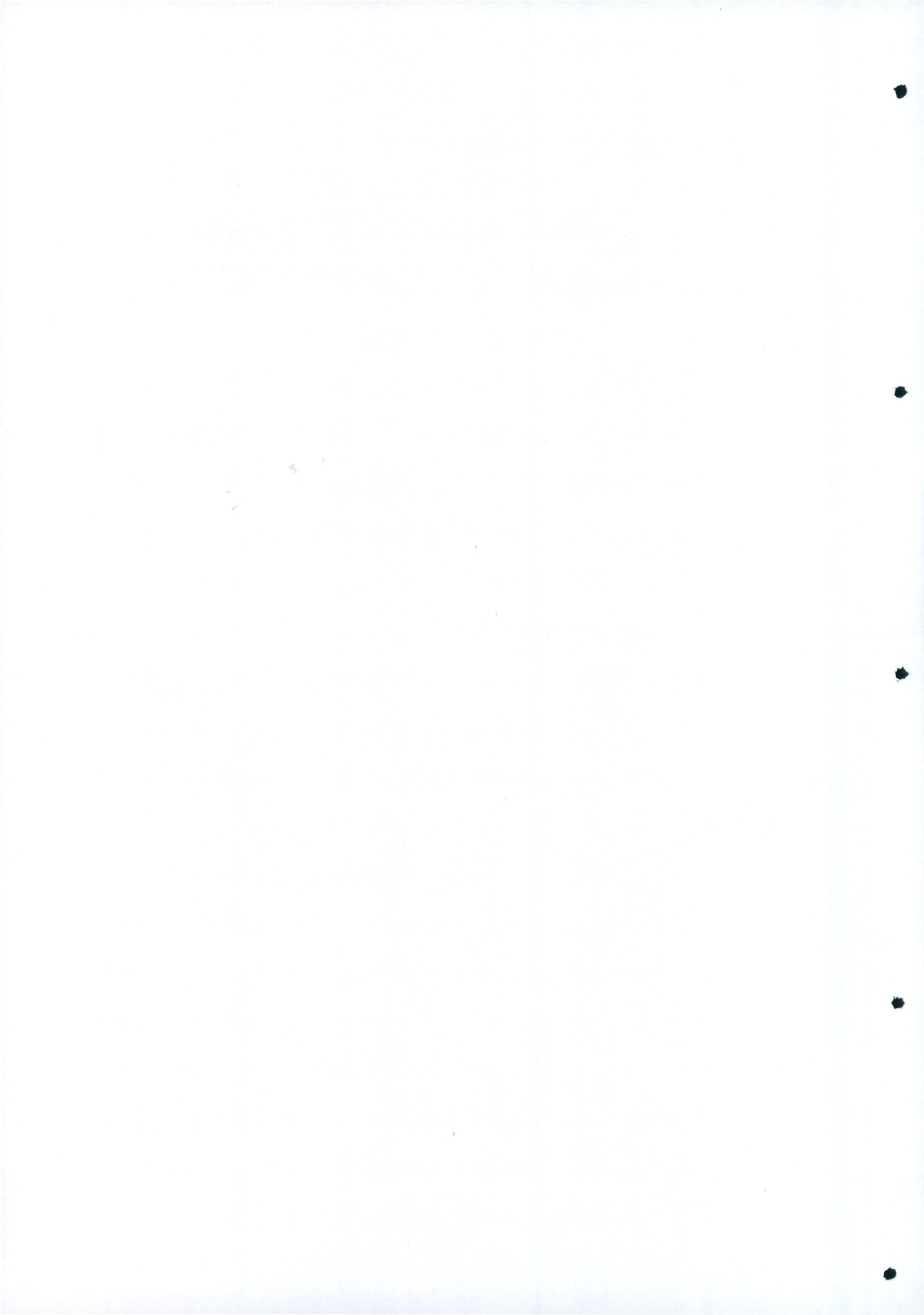
Section 3

V. The Woodlands Scheme

This is the first of three schemes. The first two are basic preparatory schemes, and the third one, entitled 'The Woodlands Story' ties together all previous learning and brings it to a higher level. In order to get a better understanding of this process I have included a brief outline of the first preparatory scheme, 'The Woodlands'. It is also where I learnt most about '2C', and it enabled me to work more confidently with the class on the story scheme, because I understood the concept of the slow learner more.

Aim: To develop the students' awareness and understanding of the art elements: line and texture through producing a low relief clay panel.

Objectives:

-To develop an understanding of the art element texture and how to represent it on paper as a drawing, using line.

-To develop students' vocabulary.

-To promote an awareness of line and texture in nature.

-To promote an awareness of line and texture in art.

-To create textures using clay.

-To develop manipulation skills while working with clay.

I chose a woodlands theme for this scheme in order to give the students an appreciation of nature. The majority of the class are from an urban area that contains natural elements like trees and parks with hedgerows. I wanted them to notice and appreciate these aspects of nature as they are present in their environment.

For the first woodlands based class, (also my first class with the students), I instructed the class to draw a still life that was composed of natural objects like nuts, leaves and pine cones. I wanted the students to concentrate of the textures of the items. At the start of the class, I asked the students to describe the textures of the items verbally. In spite of the fact that they were asked to touch and hold the objects, the students had difficulty in describing texture. They used shape words at first (like round, long etc.). After some encouragement, they began to understand, and they started to describe the texture. The words that recurred the most were; jaggy, bumpy and spiky.

The students then set about drawing the composition I had arranged for them. It soon transpired, however that they were having difficulties. There were too many items in the composition and they could not concentrate enough on any one item at a time to draw it properly. The class soon descended into confusion as their frustrations took the form of general disorder. I learned my first valuable lesson with the class at this point: The Gestalt school recommendation that learning information in large chunks did not suit this class. Rather, the approach advocated by B. F. Skinner was more appropriate i.e., to set them small pieces of work at any one time.

Bearing all of this in mind, I set them homework for the next week. I asked them to collect woodlands related jetsam, the texture of which caught their attention. The

second week, it was apparent that their general understanding of textures was much improved, as they were volunteering texture descriptive words that they were obviously more confident with. For their drawing exercise, the students were to draw just one item. They were each given an object that they could hold and touch, and the results were a vast improvement on the previous week. In all the class was better behaved and I put this down to the fact that were now working more within their abilities. The phrases "I can't", and "I don't know how to..." were still used, but I found that encouragement like "Just have a go" generally yielded satisfactory results. I also found that frequent praise for minor successes guided the students in the direction I wanted them to go and it contributed to their general self-esteem.

I asked the students to take rubbings from textured objects like tree bark as homework for the following week. To my surprise, many of the students actually turned up the following week with their homework done. Their interest in their work was obviously increasing.

The third week of the texture scheme, I got the students to split their page into four and to draw a section of one of the items which they were by now familiar with in each quarter. By doing this, I wanted the students to isolate the texture from the shape of the objects, so they could concentrate on drawing the texture alone. The rubbing homework was a great help in giving the students an understanding of the subject.

By this stage in the scheme, the students were beginning to become bored with drawing textures. While they had gained a good understanding of the topic, they felt that they were ready to move on. I told them, to their obvious delight, that they would be moving onto clay as soon as they had finished drawing. They were still not confident with their drawing and I constantly had to remind them that they had done it

before whenever they showed reluctance. But with the prospect of working in clay as an enticement, the students applied themselves to their work, and were genuinely happy with the results. For the first time, their was no idle gossip in the class, and while they were not as orderly as I would have liked them to be, the chatting in class was mostly about their work.

In the fourth week of working on textures, I opened the class by showing them support studies of clay and bronze panels produced by other artists. I asked the students how they thought various effects had been achieved; i.e. had clay been built up on or taken away from the panel?

The students were prone to answering impulsively, like saying clay had been taken away when it had obviously been added on. When asked to describe the textures and lines in the work, they would use terms like smooth, jaggy, etc.

As soon as I began my demonstration, it was obvious that the students were eager to begin themselves. This interest contributed to the class becoming a well behaved and tidy one.

As soon as they began working themselves, they discovered to their delight, that they were able to produced textures in the clay much easier than they had been able to on paper. Class confidence was high and the students did not use terms like "I Can't" at all. They worked well, helping each other, discussing their work, and they were very happy with the end results. They told me that they "Wanted to do clay forever!"

In general, the students were still easily distracted and became disorderly quickly. This week, I introduced music as an incentive to behave. The students were told that the music would be switched off if even one person misbehaved. When this happened, the rest of the class would become annoyed with the offending student and in general, this

was constructive in maintaining some level of discipline in the class. In doing this I was

practising the theories of Skinner, using the music as a form of positive reinforcement.

The Woodlands Story Scheme

This is the third and final scheme which ties together the techniques learned in the previous two preparatory schemes.

Aim: To develop the students' understanding of the art elements; line, texture, colour and pattern through the creation of textured, painted mini-sets (3D composition) based on the woodlands tale.

Week 1

Objective: To develop students' imaginative and drawing skills.

The first week of the story scheme, I held a brainstorming session. I wrote the word 'woodland' at the centre of a large sheet of paper The students made suggestions of words that were related to the theme, like trees, stream, grass etc. While their suggestions on the whole were initially relatively unimaginative, I was pleased that they displayed a generally good understanding of the subject. I also showed them slides of paintings of landscapes and asked them questions like: "What do you think this is called?" I also introduced and explained the concepts of background, middle-ground, and foreground. I asked the students to point out items that were in the background, middle-ground and foreground of each painting. From their answers, it was clear that they understood the concepts.

When showing the support-studies (slides, including the work of Rousseau, Gauguin and O'Conor) to the students, they were encouraged to make any suggestions they liked so long as they could justify their opinions. I treated each suggestion seriously and found that even the ones conveyed as witty remarks had some genuine base. It was obvious that the students lacked confidence in their opinions, but I conveyed to them the idea that all of their opinions were valid. This encouraged them to express their ideas more frequently.

They were able to pick out and describe textures in the support studies paintings and were quite cocky in their ability to do this. Obviously, their previous over-learning was paying off. (Such was the degree of over-learning in fact, that they were known to refer to me as 'Miss. Texture'!) This was a noticeable difference from my first few weeks with them.

I then read the woodlands story. I created a relaxed atmosphere for this by playing some ambient, visual, natural sound based music. I sat among the students in a relaxed posture and had them pull their seats into a circle around me. I spoke slowly and quietly, emphasising the descriptive words in the passage by changing the intonation of my voice. Initially, the students were, as usual, prone to speaking out of turn, but this provoked an angry reaction from the rest of the class, and eventually I achieved 100% silence for the first time with them. They were intrigued by the story and I encouraged them to close their eyes and imagine the scene in their minds.

After reading the story, the students underlined what they saw as key terms in the passage.

For the demonstration, I quickly drew two of these descriptive phrases. While doing this, I, as recommended by David Fontana, continually repeated sentences from the story, pausing to allow the students to dwell sufficiently on the information in order to keep the overall feel of the piece fresh in their minds.

I then got the students to draw elements that stood out in their minds, from the story. (e.g. The light fluffy clouds in the sky that reminded me of cotton wool.) After assuaging their usual lack of confidence in their drawing abilities, they began. They had a degree of difficulty in drawing from their imaginations, but I encouraged them by repeating phrases from the story, and relating them to the texture and pattern work they had already done.

The biggest problem they had was an inability to visualise details, like the structure of a tree for example. When I asked them what would make this easier, they wanted pictures to use as reference points. So I told them to collect relevant pictures as homework. This was my introduction to secondary support studies.

Overall, this class was a great success. The students were intrigued by the story, and they produced drawings that they were pleased with. The mood of the class was relaxed and friendly, and even the 15 minute recess midway through did not damage the mood. The students were disappointed when the final bell rang, and so was I. I got the feeling that I had hit the nail soundly on the head.

A WOODLAND TALE

THE EARLY MORNING MIST WAS CLEARING AND THE SUN WAS BEGINNING TO SHINE BRIGHTLY. THERE WERE ONLY A FEW LIGHT FLUFFY CLOUDS IN THE SKY, THEY REMINDED ME OF SOFT COTTON WOOL.

I WALKED ALONG THE LITTLE WINDING PATHWAY, THE GROUND BENEATH MY FEET WAS A MIXED PATTERN OF PEBBLES AND THE FALLEN CRISP GOLDEN LEAVES.

AS I WALKED ONTO THE DEWY GREEN GRASS I COULD SEE THE LAST BIRDS OF SUMMER CHIRPING HAPPILY IN THE HEDGEROWS AND TREES WHICH WERE DARK GREEN AND WARM BROWN.

JUST THEN I HEARD A STRANGE LAUGHING SOUND COMING FROM BEHIND A HUGE TREE WITH ROUGH AND UNEVEN BARK.

I LOOKED OVER TO SEE WHAT LOOKED LIKE A HUGE MUSHROOM APPEAR FROM BENEATH A LITTLE PILE OF GOLDEN LEAVES THAT LAY ON THE FOREST FLOOR. AS IT ROSE THE HEAD AND NECK OF A PECULIAR CREATURE BEGAN TO TAKE SHAPE . . . . IT'S FACE WAS LEAFY AND GREEN AND IT'S EYES WHICH TWINKLED MISCHIEVOUSLY LOOK A BIT LIKE SHINY ROUND RED STONES. IT'S NECK WAS LIKE A FAT BRANCH WITH ROUGH BARK

THE LARGE MUSHROOM WHICH ORIGINALLY CAUGHT MY ATTENTION WAS PERCHED ON TOP OF IT'S HEAD A BIT LIKE A HAT. JUST THEN . . . .

'A Woodland Tale'- Handout given to each student.
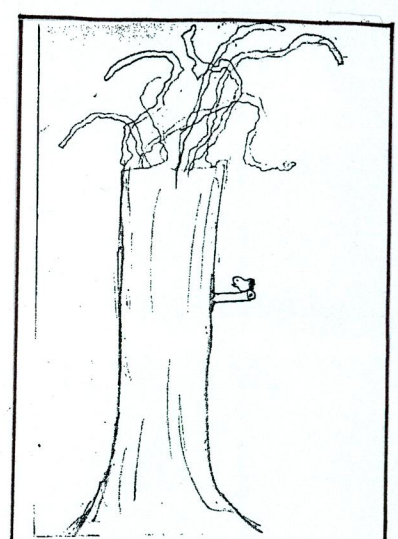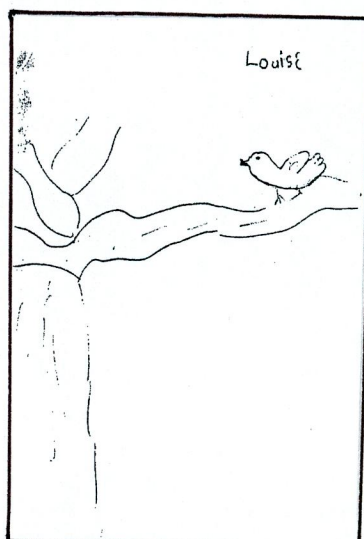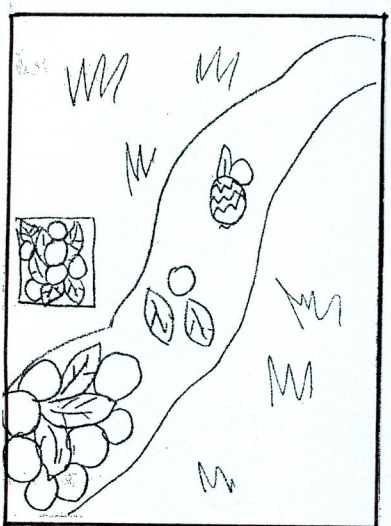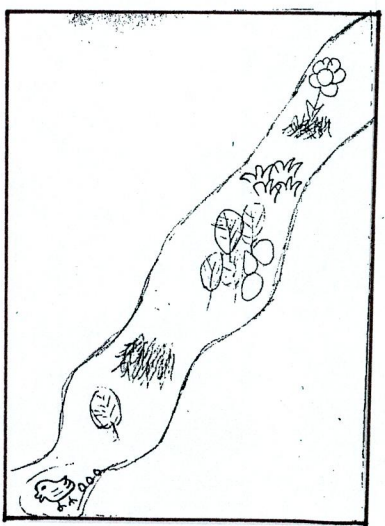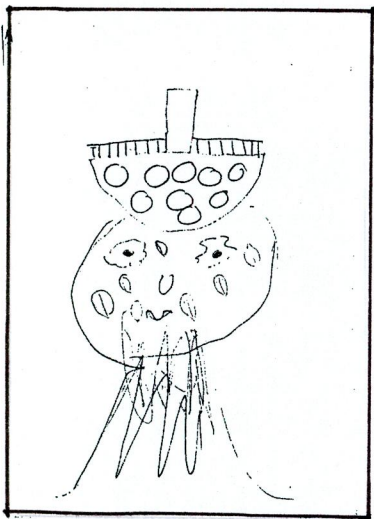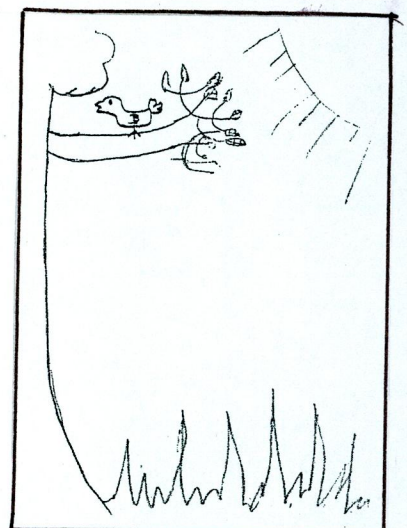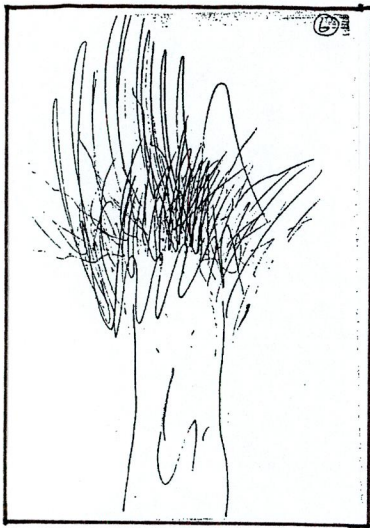
Selection of students' work from week I. Each student drew on an A3 page which was divided into 8 sections.

Week 2

Objective:

-To develop students' understanding of a balance composition: understanding and awareness of background, middle-ground and foreground, through drawing an imaginative composition based on 'A Woodland Tale'.

-To introduce students to the concept of using their own secondary support studies.

I opened this class with a brief recap on the previous weeks class, and had a brief evaluation of the work. I then showed them more 'woodlands' related support studies (slides including drawing work by T. Rousseau, Seurat and Morandi) and again asked them what they noticed about background, middle-ground and foreground. Their observations were confident and correct. They were able to accurately describe elements of each plane of a picture.

In my demonstration I composed a drawing incorporating the three planes and based around the woodlands theme, all the time explaining what I was doing and referring to my secondary support studies for guidance. After the demonstration, I was sure from the classes comments and answers to my questions that they fully understood background, middle-ground and foreground.

However, when they attempted to draw the composition, they had difficulty. Initially, I was happy with the drawings, but on closer examination, it was evident that there were some fundamental flaws. They tended to see each plane as an independent piece and had difficulty reproducing the relationships between them. They also had trouble drawing perspectives: i.e. A retreating pathway was invariably drawn disappearing into

the sky or getting wider as it retreated. While verbally, the students were able to describe concepts like perspective, they were unable to draw them.

Technically, this class was not a 100% success. The students were distracted throughout and I had to stop the class twice. There was a visiting examiner present which seemed to further contribute to the lack of order. The students were frustrated by their inability to achieve the desired results and their attention span was very low. The work produced was not up to the standard I expected: The examiner remarked that it was similar to work he would expect from an 8 year old.

During the evaluation at the end of the class, I asked the students questions like: "How do we make a pathway look like it is going away from us?" They always answered correctly, but they had been unable to put these thoughts into action. I praised every positive aspect of their work in order to build their self-esteem (which had suffered during the class) and avoid frustration. It appeared that combining all of the planes was too much for the students to attempt in one class.
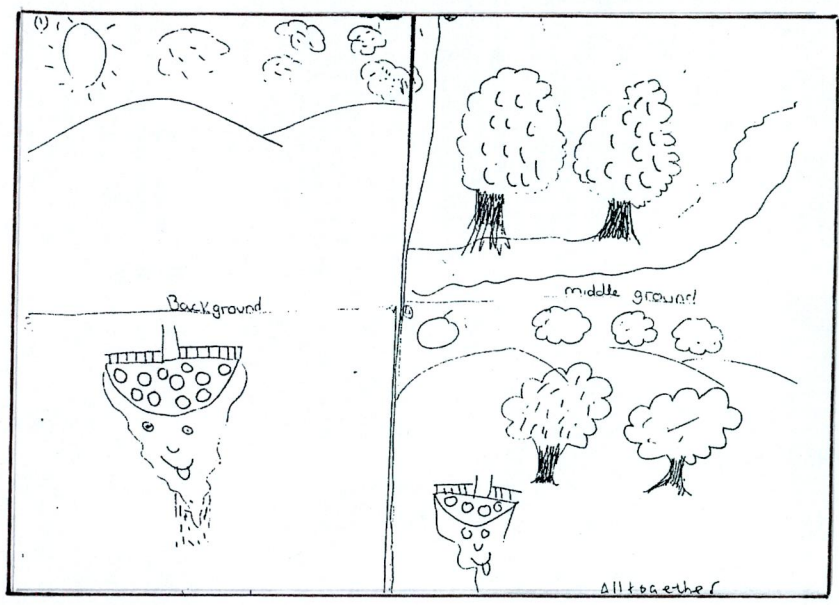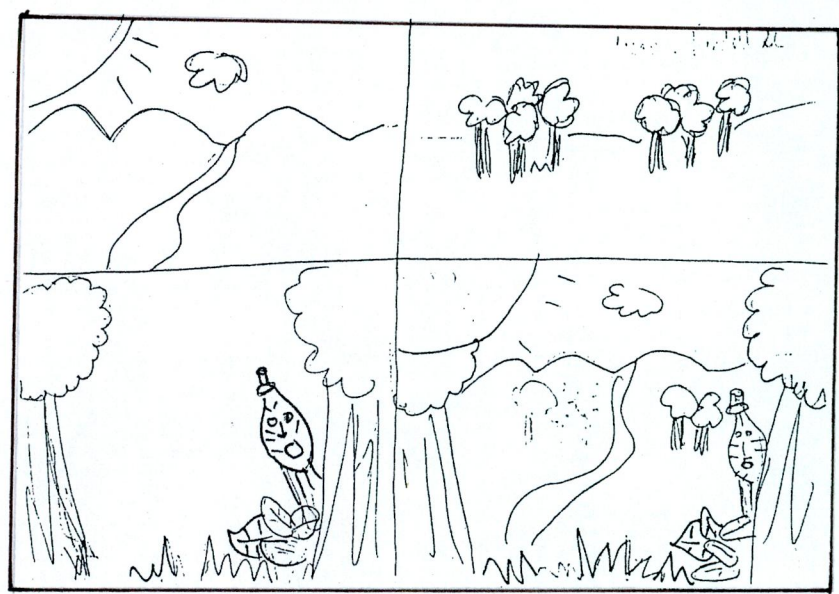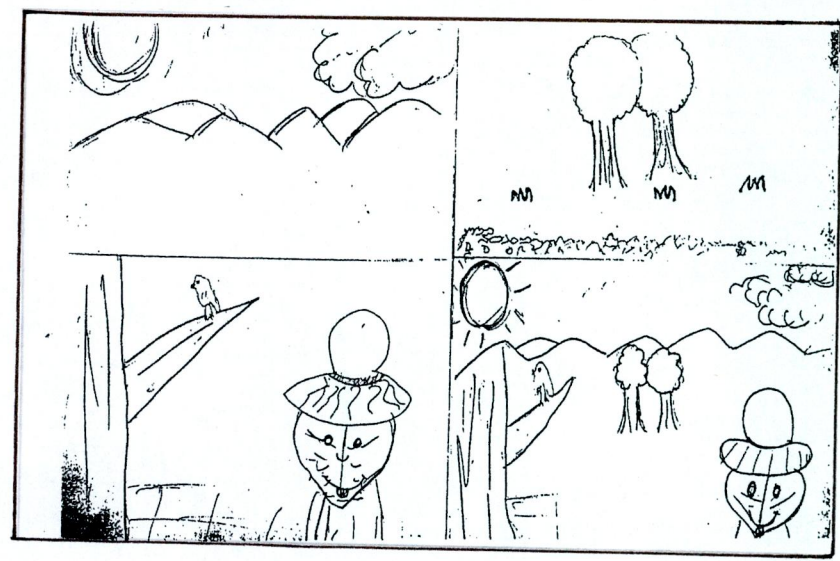
Students' work from week 2.

Week 3

Objective:

-To develop the students' understanding of Background, Middle-ground and foreground.

Bearing Skinner's theories in mind, for the third week, I decided that the best approach was to get the class to draw each plane separately and then combine all three for a complete composition.

During the support studies slides we examined again how objects appear to change depending on the distance from the viewer and concentrated the question and answer session on aspects of background, middle-ground and foreground. Again the students showed a verbal aptitude for the concepts.

For the demonstration I drew separate planes on large sheets of paper and then placed them flat on my table on top of each other, to create a total composition. As I explained what I was doing, it became obvious that some of the problems from the previous week were being addressed. Remarks like "Oh yeah!" and "So that's how…" from the students indicated that some revelations had taken place. This phenomenon was explored by the Gestalt school and was described as moments of inspiration.

The students then began drawing the background and middle-ground on large sheets and were pleased with their work, as was I. Details like perspective, i.e. trees looking small in the distance, were competently dealt with.

Again, as the students felt they were working within their abilities, their attitude was positive and they were well behaved on the whole.
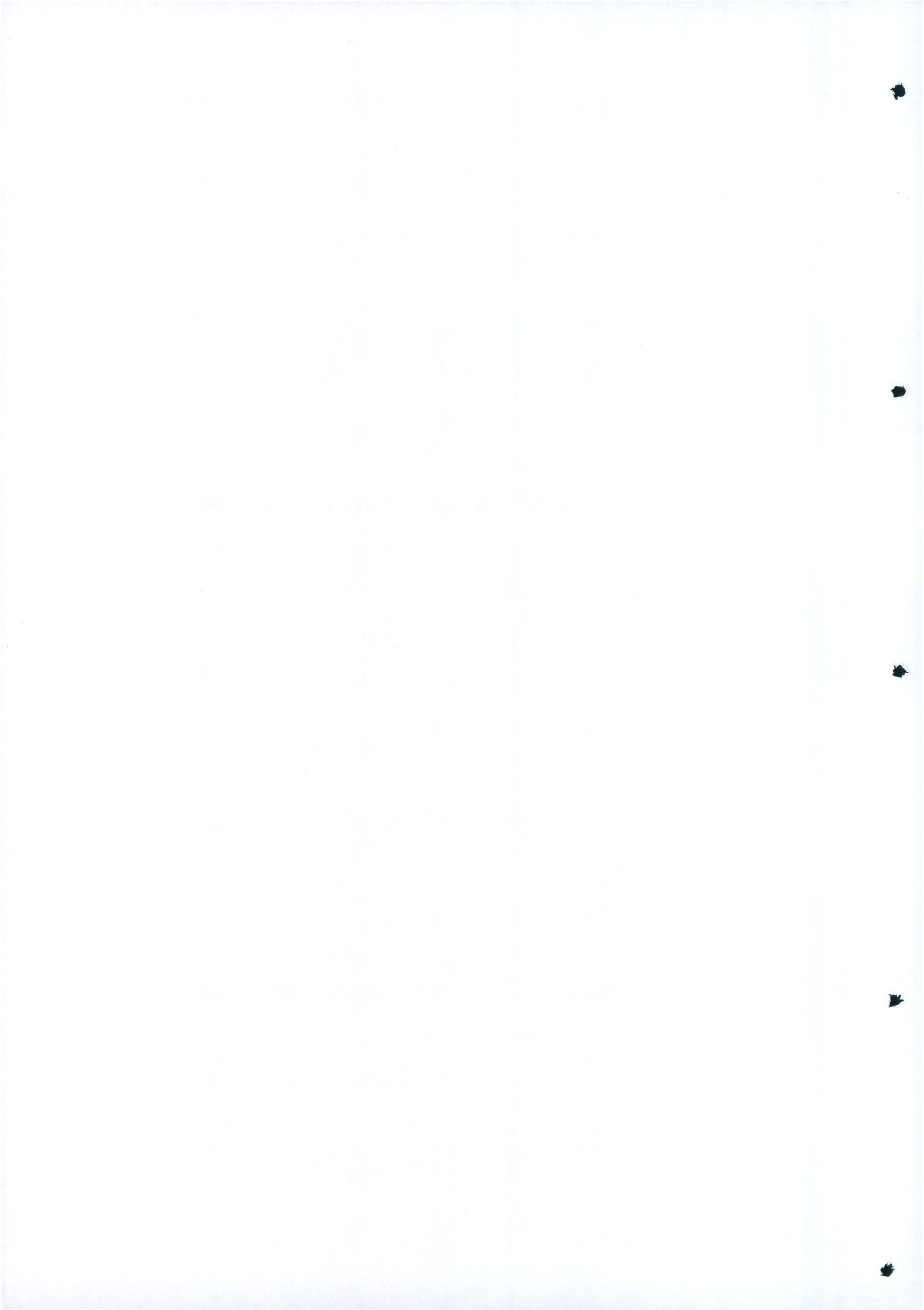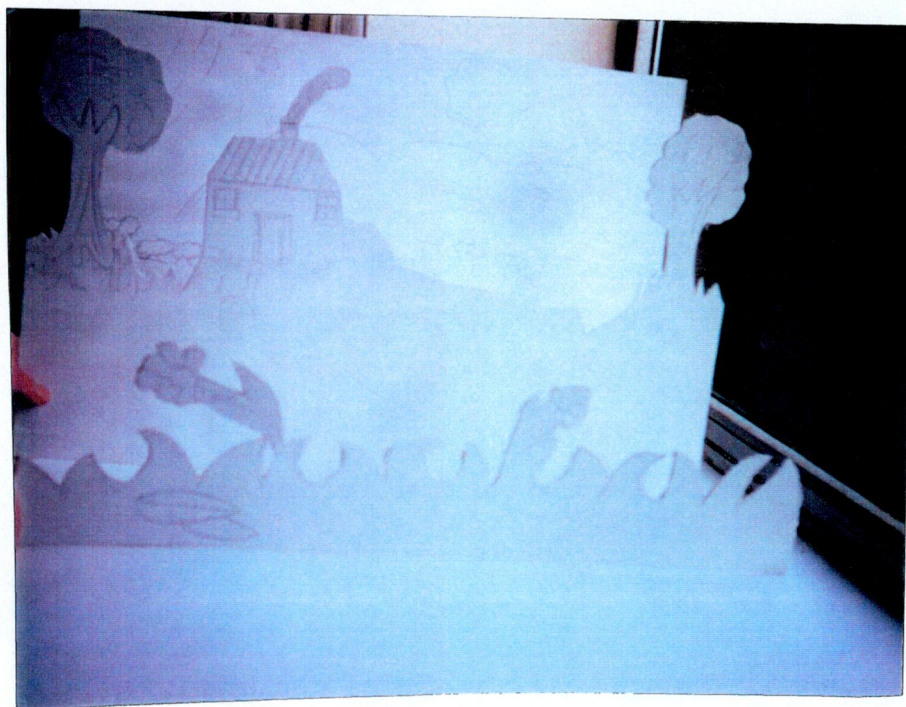
A student's work from week 3. Background, middle-ground and foreground on three separate planes.
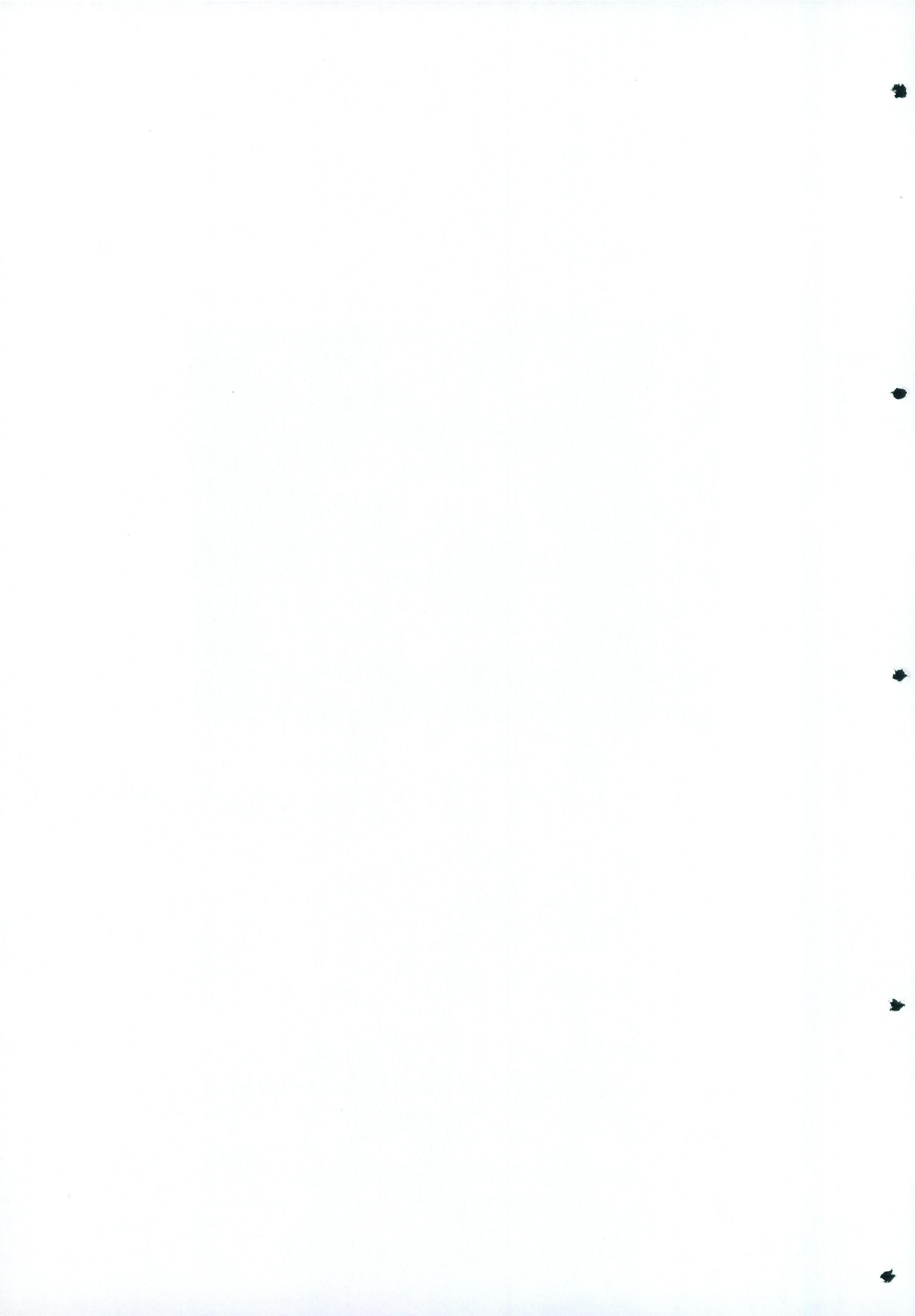
Week 4

Objective:

-To determine students' understanding of background, middle-ground and foreground in order to produce a balance composition.

I began this weeks class with a brief recap and evaluation of the previous weeks class. I asked questions about their work, and ensured that the students still understood the concepts and the direction they were taking.

They placed their three planes in the proper order on top of each other. They then drew a complete composition from this onto A4 sized paper. This was a successful class, in that the work was accomplished successfully and as a result, the students were well behaved. I did, however, notice that the students were becoming bored with drawing, and I decided to move away from it in the following week.
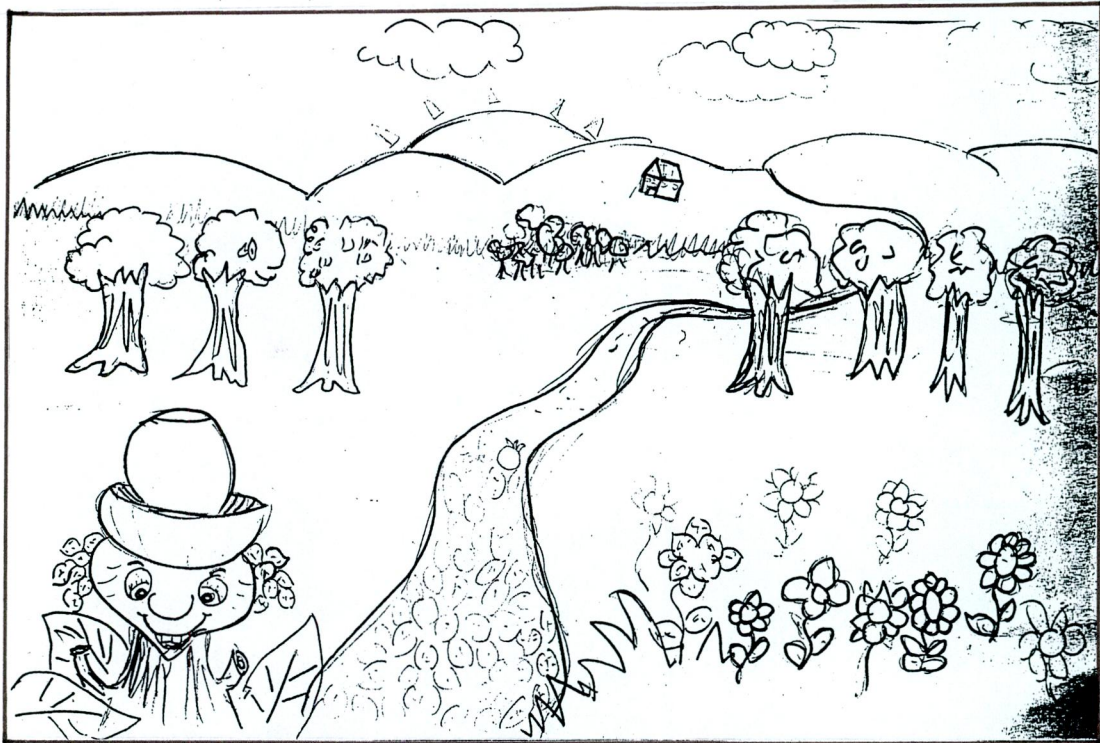
A selection of students' work showing a remarkable improvement from week 2.

Week 5

Objective:

> -To develop students' understanding of colour and flour mixing through

> completion of a colour exercise worksheet that I devised.

The knowledge gained from this was to be applied the following week to paint the planes of the woodlands composition, work currently in progress. I devised a worksheet which I called the 'Primary Girls', making a direct reference to the class's current band of preference; 'The Spice Girls.' This novelty factor was very useful in gaining their concentration, as an external factor influencing attention. The worksheet was also designed to encourage the students to discover the colours for themselves' an approach proposed by Morris L. Bigge, based on Gestalt principles.

Support studies for this week were 'The Merry-go-Round' by Mark Gertler and 'Marilyn' by Andy Warhol. As an introduction, I enquired as to what previous knowledge they had of colour. It transpired that they did not have any which meant that I was introducing new topics to them.

As a demonstration, I went through the worksheet, explaining how I created the secondary colours by mixing the primaries. The students were very eager to begin. When I handed out the worksheets, the students began their work enthusiastically and were quite meticulous with the sheet. They completed the sheet successfully and clearly understood the theories involved. They enjoyed their learning and were well behaved throughout. I decided that they would be ready to apply their newly acquired knowledge of colour to their woodlands project the following week.
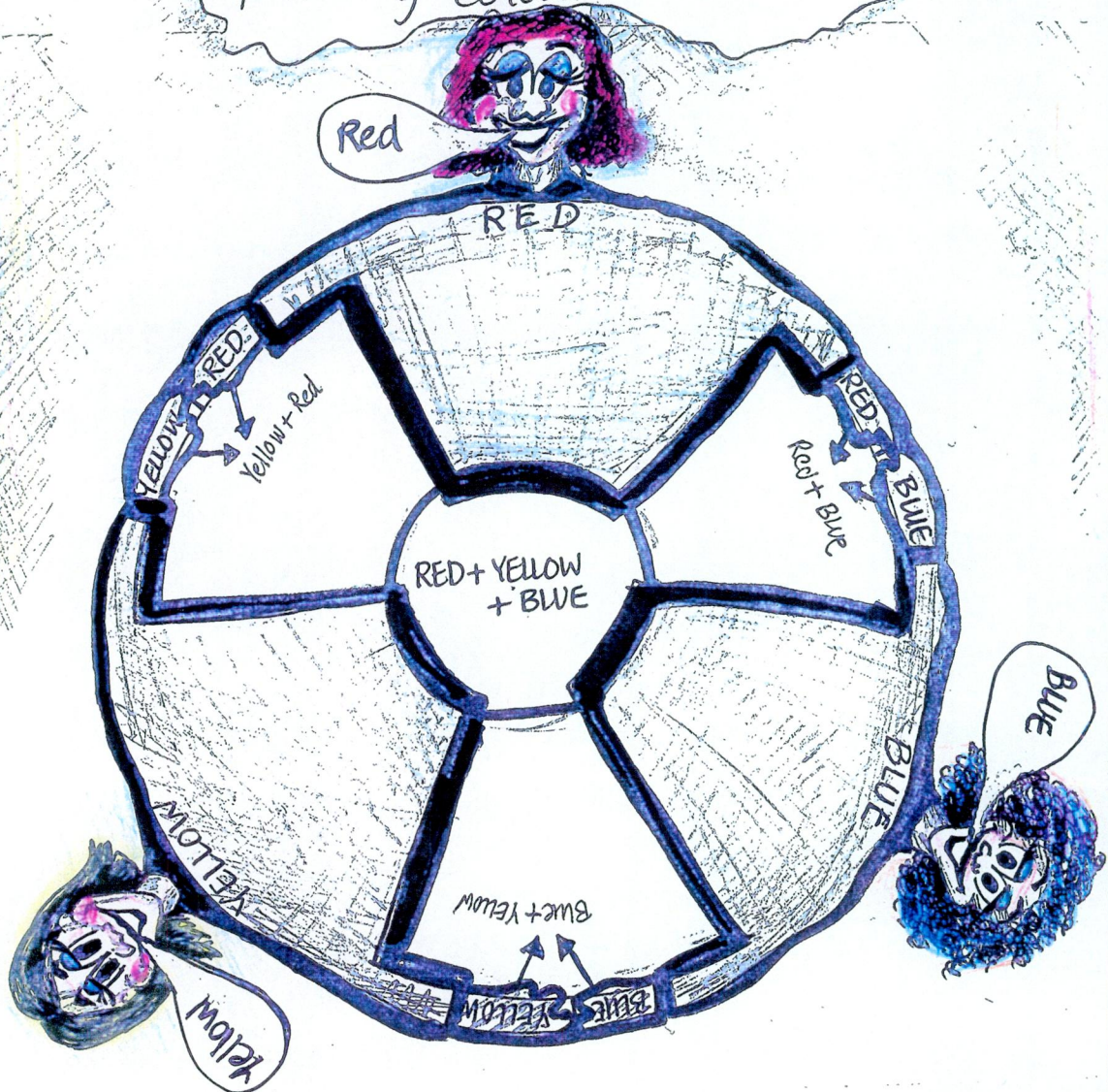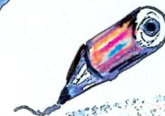
Page 1 of the work sheet from week 5

(2) In the space between each 'primary girl' paint the <u>secondary colour</u>.
You get a secondary colour by *mixing* <u>2 primary colours</u>.
Mix the <u>touching</u> primary colours.
e.g. Red + Yellow

(3) Can you now name the secondary colours?

. . . .

. . . .

(4) How did you get them?

1) Red + yellow = [ ]
2) ...... + ... = [ ]
3) .... + ... = [ ]

(5) Make one of the secondary colours lighter & one darker. This is done by adding more of one colour than another

Page 2 of the worksheet from week 5.

Week 6

Objectives:

> -To further emphasise the students' understanding of colour through putting
>
> their knowledge to practical use by painting the background of their mini-sets.
>
> -To introduce students to painting with a sponge.

In order to rejuvenate the class's interest in the woodlands theme, I created a mini-set, mounting each plane of the composition on card and gluing stands to the back of each, enabling them to stand freely. I wanted the class to create sets of their own, putting into practice the knowledge of colour and texture that they had by now. As the class can not be trusted with knives and scissors, I mounted the planes that the students had already drawn, on card, and cut them out in preparation for this class.

As support studies, I showed the class slides of paintings and stage sets, drawing attention to the changes in colours in the background, middle-ground and foreground. I asked them what changes occurred in colour with distance. They accurately identified that the sky lightened as it approached the horizon, and hills in the distance are duller in colour.

When I showed the students the painted set I had made, they became very excited. They were surprised when I told them they were going to paint the same thing, but when I explained the way in which the concepts of colour and texture they had learned would be incorporated, they became eager to begin.

They began painting the background plane, mixing secondary colours from the three primaries they were given. The students were amazed with the variety of colours they

were able to create, and were very happy with their work. They were so absorbed in it, that they did not notice the presence of a visiting examiner in the classroom.

This weeks class was very small as a result of the continuing absenteeism problem, and as a result I was able to give a large amount of individual attention to each student.

At the evaluation at the end of the class, I asked the students which painting techniques they preferred and how they had achieved various colours. They were confident in their answers, and were eager to begin painting the middle-ground. Time however did not permit this, but I was happy with the quality and quantity of the work they produced.

**Selection of students work from week 6 and 7**

Week 7 & 8

Objectives:

-To introduce students to textured paint techniques and apply the to the middle-ground and foreground of the mini-sets.

Weeks seven and eight were the final two weeks of the woodlands story scheme. During these weeks, attention was paid to colour intensity. Flour and oatmeal were then added to the paint to give the planes a textured look. This was in reference to the fact that detail is greater in the middle-ground and foreground. Support studies was the work of C.D. Freidrich.

The usual discipline problems were in evidence due to the presence of three particular students who are recognised by the school as being the main reason that the slow-learners stream is not working properly. They effect the self esteem of the entire class. However, I feel that over the past few months, the self esteem of the more timid students has improved to the extent that disruptions from the three principle trouble-makers do no effect them, and their work, as much as they had initially.
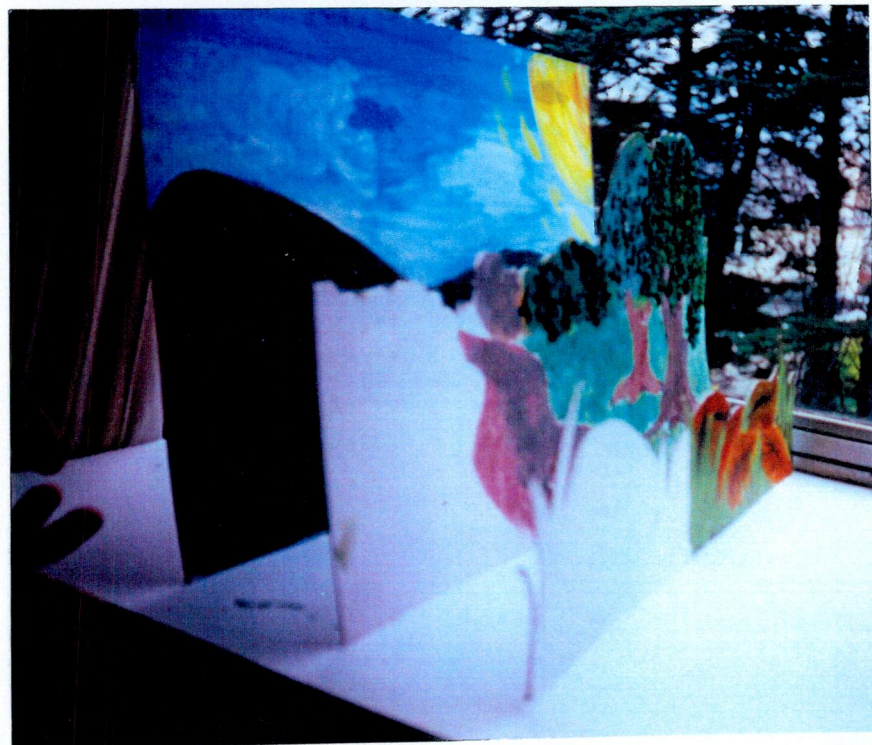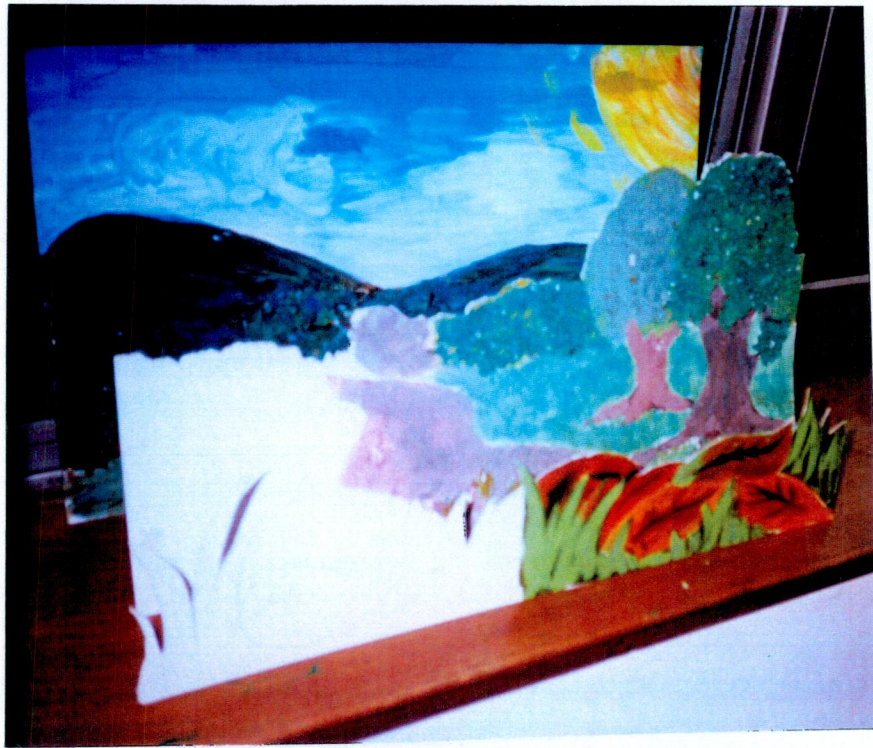
Visual aid of my mini-set showing including features such as the sponged sky in the background, the green oatflake textured tree and vividly coloured grass and leaves of the fore ground.

Conclusion

In conclusion, I have learned that the topic of teaching the child with a learning disability is a huge, very complex one. This dissertation merely scratches the surface. However, by studying the works of such notable psychologists as Piaget, and behaviourists like B.F. Skinner, I have gained valuable information about the workings of the mind of a slow learner. This understanding has helped me become a better teacher as I now know some of the reasons behind their behaviour. This knowledge has helped me instruct the students more appropriately, thus ensuring they work to their best abilities.

I consider that the acquisition of this knowledge is essential for any teacher working with students with a learning disability. Primarily for the reason that as it aids understanding, the teacher will be less likely to become frustrated with the students. This frustration will become obvious to the students and they are inclined to play on it. The class in question, '2C', prides itself on being able to make a teacher leave in frustration. Happily, through research and understanding, I was able to avoid this unhappy consequence. On the contrary, I was able to teach '2C' information that I hope will be of use to them in their futures, at the same time, expanding on my teaching techniques.

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